The Builder.

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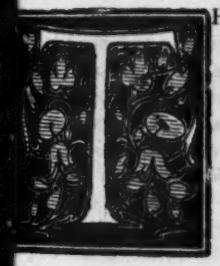
Municipal Trading.



THE proposal of the Government, made just before the Easter vacation, to appoint a Parliamentary Committee to inquire into the question of municipal trading was, of course, agreed to. The time of this moribund Parliament might be better occupied than in collecting the opinions of various persons upon the question of what work Municipal Corporations may or may not take up. That a number of interesting details, showing the results of the working of various enterprises—gas, water, electric lighting, and so forth—will be tabulated, is probable. But the report of this Committee will make not the slightest difference in what is broadly called municipal trading.

In discussions on this important subject it seems to be too often forgotten that Municipal Corporations are the local representatives of the local ratepayers; that they represent the inhabitants of a town or a district. Individual freedom is so strong in this country that, this being the case, it is really for the inhabitants of a particular locality to limit, if they wish, the energy of their Corporation. If the inhabitants of a town consider that a Corporation should not supply electric light, but should leave it to a private company to do so—or let the place go without it—they have ample opportunity of showing their opinion. For this reason it seems to be clear that any report of a Committee can be little better than academic. It may even produce an Act of Parliament which shall enact that a Municipal Corporation shall not undertake anything except certain classes of work. But if the inhabitants of towns and districts wish to have various matters in their own hands, it is quite certain that no Act of Parliament which refuses them this right will have more than a temporary effect. The report of such a Committee is, therefore, really in the same plane as the expression of opinion of a few private individuals. Nor at the present time can we perceive anything more than a normal and expected development of municipal enterprise. One thing, indeed, is obvious, that something in the nature of a struggle is arising between Municipal Corporations and large companies. We confess that in many respects the growth of the rivalry is a healthy sign. In America, "trusts," as they are called on the other side of the Atlantic, are all-powerful; such monopolies must be carefully watched. A healthy competition between Municipal Corporations and large companies—in such matters, for example, as the telephone service—is likely to serve the interests of the people at large. Indeed, the cry against municipal trading is to a great extent an interested cry. Tramway companies, electric lighting companies, companies to supply workmen's dwellings, naturally wish to have a monopoly. There is in many respects room both for municipal and private enterprise. But sooner or later municipalities, if they wish to have a monopoly in regard to certain prime necessaries of existence, will most certainly obtain it, because the voter is sooner or later sure to have his way.

Practically, it is pretty obvious to any reasonable person what are the limits of municipal enterprise. Like many other things, they are not so easy of accurate definition. Yet when they are specifically enumerated an ordinarily reasonable ratepayer has a pretty clear opinion on the subject. He does not need half a dozen members of Parliament to tell him what a Municipality may properly undertake. It is already clear that lighting, the supply of water, and the means of locomotion by means of tramways are proper subjects of municipal work and organisation. Every one of these is for the purpose of supplying a general and a common demand which cannot be done by individuals. To a great degree it seems clear that one of the elements which govern the propriety of municipal trading is that it should be connected with some matter which, as we have said, cannot properly be done by individuals. Bread, meat, groceries, can all be supplied by individuals. Street lighting, on the other hand, is of a general nature, which, if it be not done by a Municipality, must be supplied by a company. It may fairly be admitted that none of these definitions or limitations are necessarily logical, because in regard, for example, to lighting, it may be said that a single person may contract to supply a city with ligh But this is exceptional, and, at any rate, a city cannot be supplied with light as it can with bread by a number of individuals. So that if we come to consider the elements which are present in what may be called legitimate and recognised municipal trading, we shall find that they are not sound in measures which are debatable.

The question of Municipal Corporations doing their own work, in regard more especially to the erection of buildings and work of a kindred character, is entirely different. This has not to do with the supply of some general and necessary material, but with work which can be as well done for the Municipality by individual contractors. But it is impossible to see any just principle against Corporations doing work for themselves instead of employing outside contractors. Why should a Municipality, or any other local body, be debarred from doing that which any trading corporation may do? Obviously, the only reason against it is a practical one, namely, that work in the nature of building work can often be better and more economically performed by independent contractors. It is expensive, in the first place, to keep up a staff which may not always be required, and, in the next place, specialism is so important in these days that work of the best quality cannot be obtained without going to special firms or persons.

The owner of a large estate keeps his repairing carpenter and his bricklayer; he has his carpenter's shop. In analogy it is obvious the Municipality may have similar, though larger, departments. From the point of view of the workman and the employer no harm can be found with such a

system, for the artisan and foreman must be employed and materials must be purchased. Where, it seems to us, a Parliamentary Committee may do some service is by carefully investigating the results of large independent operation by Municipalities—that is to say, the carrying-out of large works which in ordinary circumstances would be given out to contractors. We have said many times that it is exceedingly difficult to form a practical judgment on the much-discussed subject of the Works Department of the London County Council, unless or until the operations have been investigated by an independent body. If this approaching Parliamentary Committee will, as far as possible, look into these and similar practical points, and leave academic opinions on one side, it may furnish the public with some grounds for the guidance of its judgment. It is the public—in other words, the ratepayers—who, as we have said, must at the last be the judges as to what a Municipality, whether a large or a small one, whether it governs a great city or a small urban district, shall or shall not undertake.

But there is another point upon which something should be said. The carrying-out of the main work will produce of necessity subsidiary works or trades, and it is quite illogical to limit Municipalities too closely in this respect. A plain instance may be given. If a Municipality manufactures gas, it necessarily becomes a dealer in coke. It is natural for the man in the street, when such an illustration is given, to say, of course, the coke must be sold. Why should coal and coke merchants complain? But once allow that a Municipality must of necessity become a trader in connexion with what may be called legitimate municipal enterprise, it follows that such trading will be more wide and more varied than at first sight is expected. For clearly, if a Municipality is to undertake certain trading duties—and some it is entitled to do by the admission of the most conservative of ratepayers—then it follows that a Municipality must do this to the best advantage in the interests of the ratepayers. During the recent debate on the appointment of a Committee one member said that, though it was legitimate for a Municipality to supply a district with electric light, it ought not to supply electric power to private persons. But if a Municipality can, by the machinery necessary to supply light to a district, also by the same means supply power, and so enable the lighting to be done more cheaply in the interests of the ratepayers, it seems to be an absurd provision which will prevent it from so doing. If a Municipality may have tramways in its district, with cars drawn by horses, it would be legitimate to raise its fodder on its own farm and to sell the surplus produce. All these are indirect, illegitimate in one sense, but yet necessary consequences of legitimate municipal trading.

In truth, England is in a process of much greater social development than is often supposed, and applied science is becoming prominently the great force of the day. The intercommunication between the development of municipal trading and the application of science to the daily needs of the people is very marked. Neither Conservative politicians, trading monopolists, nor timid ratepayers will stop either the progress of the one or the other. The main point is that the progress should be sure and steady, and should be followed out on business-like methods. But the more carefully the subject of municipal trading is considered, the more unreasonable it seems to try to define it by sharp definitions. The subject has to be considered from a practical point of view, from the point of view of the ratepayers' interest. We have little fear, having regard to the eminently practical character of the English mind and to the satisfactory way in which municipal institutions have been worked in the past, that Municipalities will venture beyond legitimate bounds in regard to what is called municipal trading.

NOTES.

The Workmen's Compensation Act.

WE have now arrived at a period of the Parliamentary Session when some idea can be formed of the prospects of legislation for the year. It is clear that there will be no amendment to the Workmen's Compensation Act except in regard to the inclusion of agricultural labourers. It is undesirable to have trivial alterations of important Acts thrown hastily into the statute-book; but the decisions of the Court of Appeal have revealed various injustices in the Act which should have been removed as soon as possible. At a later period a new Act to include the temporary amendments could have been passed in a future Session. The limit, for example, in regard to the height of buildings is a glaring injustice, and definitions of scaffolding have made the Act in some respects perfectly ridiculous. It would not have been difficult to have removed these blots this Session by a short section added to the amending Bill which is to give agricultural labourers the benefit of the Act. The Home Secretary has stated in the House of Commons that a system of insurance has prevented the Act from operating adversely to employers. Under these circumstances it is astonishing that some attempt has not been made by the Government, or by independent members, to make the Act more systematic and equitable in regard to men engaged on buildings.

The London County Council and Electric Pressure.

THE City of London Electric Lighting Company has got the consent of the London County Council to raise its standard pressure of supply from 100 to 200 volts in the area supplied by the company under its Southwark Electric Lighting Order. The consent, however, was given subject to some very stringent conditions. The difficulties which arose between the Westminster Electric Supply Company and their consumers on the raising of the pressure by the company last August showed the necessity of making these regulations. The consumers thought that the company ought to bear the expense of any alterations in the wiring made necessary by the increased pressure, that it ought to replace old lamps by new ones, that it should reduce its charges, and that it ought to pay any increased premium charged by the fire insurance companies. As no definite conditions had been made by the County Council on some of these points, there was naturally endless quarrelling over them. In the Southwark district, so far as we can see, this will be avoided. The twelve conditions attached to the Council's consent have been excellently drafted, and seem equitable. For example, those who adopt the higher pressure must get a reduction of at least 15 per cent. on their meter bill. We know several cases where the consumer has accepted a higher pressure on being told by the supply company that he will thus get a better light. He ought to have insisted on a reduction of the tariff, as otherwise he is being treated unfairly. At these higher pressures the County Council give the Board of Trade a hint to sanction the earthing of the middle wire. Another condition made is that any consumer supplied by alternating current can insist on being supplied at 100 volts. As this can always be effected very easily and cheaply by a two-to-one transformer, there seems no reason why all alternating supply companies should not be willing to do this.

The L.C.C. Gas Bill.

THE Bill promoted by the L.C.C. to obtain legal recognition of tests made with the portable photometer, and to regulate the charges for prepayment meters and fittings, came before a Select Committee of the House of Commons on the 3rd inst. As an indication of the importance of the Bill is to be seen in the fact that fourteen counsel and nearly all the leading gas engineers and photometrists of London are watching the Bill for one side or the other. The Committee is confining itself for the present to the portable photometer, and has taken evidence from Messrs. Dibdin, Hehner, Gerrard and Carr, and from Dr. Clowes and Dr. Percy Frankland, all for the promoters. Mr. Vernon Harcourt, one of the Gas Referees, has also given evidence as an independent witness. On the 6th inst. the Committee adjourned until the 1st proximo. The general drift of the evidence has been to the effect that the gas companies supply 16-candle gas to the testing stations, but not to every consumer in every part of their districts, and that it is their duty to supply every consumer (save when connected to a dead-end main) with 16-candle gas without regard to cost; while the gas companies assert that such a requisition would necessitate the supply from the works of 18½-candle gas, and that even then there would be constant risk of default. In view of the admitted deterioration of gas under certain conditions of supply, the question for the consumer appears to devolve into this: Is it better to pay for 16-candle gas and obtain 14-candle gas, or to pay for 18½-candle gas and get 16-candle gas? We consider the former to be the lesser of the two evils. Pure coal gas as made from the coal necessarily used in London has an illuminating power of about 14½ candles, and the process adopted by some of the companies of "greasing" the gas with petroleum or benzol up to the 16-candle standard does not materially add to the industrial or domestic value of the gas, while it does materially add to the price the consumer has to pay for it. Stringent daily tests should be made in suitable houses, not (as at present) inhabited by or under the control of employés of the gas companies, but not in buildings so constituted or so supplied that the tests will not give a fair indication of the quality of the gas in the street main from which the building is supplied.

Exhibition of Modern Illustration.

UNDER the auspices of the Board of Education an exhibition of modern illustration is to

be held in the South Kensington Museum (which is now called the Victoria and Albert Museum), to open somewhere about November 1. It is to be confined to modern examples of typographical work executed since 1860. This date is taken as covering the time during which photography has been available for reproducing, and during which time consequently the original drawings have been preserved and are available for exhibition. This will no doubt prove a very interesting exhibition, and will probably include some very good artistic work.*

The Lift at the Law Courts.

THE lift at the north-west corner of the Law Courts has now been in operation for nearly the whole of last sittings. It is obvious from the use which we understand has been made of it that there should be one in each angle of the building. Between six hundred and seven hundred passengers have occupied the north-west lift every day. Many of these are, so to speak, multiplied passengers—solicitors' clerks who have to ascend and descend several times in the day. But the numbers show conclusively that the Courts of Justice ought long ago to have been supplied with lifts in all parts of the building. It would be desirable if a lift were placed at the north end of the central hall, continually moving up and down, so as to take passengers to and from the Court corridor. A great amount of inconvenience is caused to solicitors, witnesses, and others who desire to use the Strand entrance. They run the risk of breaking their necks down dark staircases, or have to hunt for the little staircase which was recently placed at the north end of the central hall. Bad as the practical arrangements of the Courts of Justice originally were, it is quite certain that they might easily have been improved if the Board of Works had taken some thought to the convenience and the requirements of those who use the Law Courts.

Touting Architects.

AN architect in a northern provincial town sends us a copy of the following letter, which has been circulated by a firm of architects from another city, who have set up a branch office there. We suppress the names and address :—

"DEAR SIR,—We have opened offices at the above address, where we intend to practice as architects.

Having been successful in * * * * for many years we feel that there is an opening in your town for architectural enterprise. Any work entrusted to us would have our personal attention and supervision.

The enclosed list of work will show that we have in progress and finished many important buildings obtained in competition and otherwise. — Yours faithfully, * * * * * *"

It is needless to say that the names of the signatories to this bare-faced professional (or unprofessional) advertisement are not to be found on the roll of the Institute of Architects. The correspondent (an Associate of the Institute) who sends us the document writes, referring to our recent article on "Provincial Architectural Societies"—"You seemed to think the builder-architect was the only trouble with provincial architects. You will see, however, by the enclosed that we have even worse to contend with. Members and Associates of the Institute derive very little benefit from their membership in provincial towns, and I think this sort of thing makes registration almost a necessity." We sympathise with our correspondent's feelings, but would registration really do much to mend matters in this respect? The people who sent round a letter like the above would nevertheless get themselves registered, and would find some way of advertising perhaps not so obvious but equally effective, as far as such tactics are effective. To people of common sense and judgment such a circular would probably act as a warning.

* Further information is to be obtained on application to the Secretary, Board of Education, South Kensington.

St. Mary de Grace, East Smithfield.

IT is stated that in the course of making excavations at the Royal Mint for the building of new metal and die offices the workmen have dug up what are supposed to be the remains of the foundations and of a doorway of St. Mary de Grace, the "East Minster" of London. The New Abbey of St. Mary de Grace was founded by King Edward III., in 1349, in fulfilment of a vow he had made when overtaken by a storm on his way to France, that if saved by the grace of the Virgin he would dedicate a church in her honour. The Cistercian Abbey, which rivalled Westminster Abbey in its extent and importance, was erected within a new graveyard of the Priory of the Holy Trinity, by Aldgate, which one John Colly had made, during a grievous pestilence in Edward III.'s reign, where had been a vineyard appertaining to the Tower. King Edward III. bestowed Leybourne Castle, in Kent, upon St. Mary de Grace, whose revenues at the surrender were valued by Speed at 602*l.* 11*s.* 6*d.* per annum. The Abbey buildings were granted to Sir Arthur Darcie, who razed them to the ground in or shortly after 1540. On their site was erected the Victualling Office, with stores and slaughter-houses, established under the Navy Board in 1683. In 1742 larger storehouses and factories were opened at Deptford, and offices were subsequently assigned to the (old) Victualling Board in Somerset House. The buildings, which afterwards served for the "Tobacco Warehouse,"* were eventually removed for the erection of the Royal Mint, opened in 1811, built after the designs by Johnson, and completed by Sir Robert Smirke. In Vol. I. (1860) of the "Transactions of the London and Middlesex Archæological Society" is reproduced an undated but reputedly contemporary survey of the abbey and its precincts, which shows two detached gable-ended buildings with the "Couent Garden" and "Pineaple Garden" to the east; to the north is "Hogg Lane," now Royal Mint-street.

* See J. Gwynne's Plan, 1766; Horwood's Survey, 1799; the several views in the "Crowle" Pennant; and our "Note" of June 6, 1891, upon the Hodgkin Collection of views, plans, &c., lent to the Naval Exhibition held at Chelsea in that year.

The Guildhall Exhibition.

THE Loan collection of pictures at the Guildhall fully keeps up the high character of the previous exhibitions held there. These annual exhibitions at the Guildhall, in fact, though instituted especially for the benefit of the poorer classes who cannot afford to pay gate-money for picture exhibitions, seem likely to become an institution of no little artistic value, and where amateurs may from time to time have the opportunity of meeting again with works which they have admired in the West End exhibitions and which have passed into private hands. Among the prominent pictures in the present exhibition are Mr. Holman Hunt's "Shadow of the Cross,"—for which indeed we can only profess a very partial appreciation, but which is nevertheless in a sense one of the remarkable works of the day; Mr. Peter Graham's "Gannet's Nest," one of the best pictures, and the most typical of his special talent, that he has painted; Mr. Briton Rivière's "Daniel," of which the same may be said; Mr. Abbey's noble and pathetic "King Lear"; Mr. La Thangue's "Harvesters at Supper"; Lady Butler's "Quatre Bras"; Mr. Crofts's "Evening of the Battle of Waterloo"; Sir E. Poynter's "Queen of Sheba"; Mr. Waterhouse's "Lady of Shalott"; Mr. Forbes's "The Quarry Team"; Mr. Sargent's "Miss Astor"; Mr. H. W. B. Davis's exquisite landscape "Summer-time" (called originally, if we remember right, "Elderberry Blossom"); Sir L. Alma Tadema's "An Audience at Agrippa's"; Mr. Whistler's "Carlyle"; Professor Herkomer's memorable portrait on a white ground, called here "The Lady in White," and Mr. Lavery's portrait of Lady Young. A loan exhibition which includes such a set of pictures as those we have named is of more than popular interest. Among pictures of interest which are less familiar to us may be mentioned a beautiful small work by Mr. Arthur Hughes, "Silver and Gold"; Mr. Wyllie's "Commerce and Sea Power," a fine *marine*, as the French say (we want a better word than "sea-piece"); Mr. Allan's "The Wild North Sea," another fine work of the same class; Mr. Brett's small picture of "Newquay"; and Mr. Henry's artistic and suggestive picture "Symphony." The notes on the pictures might be better done and more to the point than they are. It is absurd to drag in Ruskin's exaggerated praise of the sky in Lady Butler's picture—as capricious and untrue as his exaggerated censure in many other cases; and in the note to Mr. Crofts's picture (which is a quotation—we are not told where from) the expression that Genappe was the first important defile through which the French army "retired" is apt to convey an absurdly false impression of the facts; there was nothing that could be dignified by the name of "retiring" after Waterloo; it was simply a rout.

New English Art Club.

AMONG the sketches hung at the lower end of the room at the Dudley Gallery Mr. Rich's "Croydon" (2) is a good example of a slight sketch with very fine quality—something about it reminding one of Turner's sketches; and Mr. James's two studies of flowers (6 and 26) are also to be recognised as colour studies, and Mr. Brabazon's sketch of flowers (17). As to Mr. Brabazon's so-called sketches of general scenes (14 and 23), and Mr. Carter's "Landscape near Albano" (50), they are childish, as things to hang at an exhibition. Miss Fanner's Twickenham picture, called "Midsummer" (57) is, as usual, a fine effect of trees and clouds, but the small temple might have been drawn upright. Professor Brown's "Wind, Sun, and Storm" (69) is a striking effect of light and atmosphere; we do not see any indication of wind, however. An interior, "The Manuscript" (93) by Miss Ethel Walker, is a good study of a lady in a yellow dress seated before a piano. Mr. Mark Fisher contributes a small landscape (99) in his usual fine and broad style of painting.

Miss Fanner's "A Spring Tide" (116), a high-tide scene just below Kew Bridge, is a really fine work, and gives the impression of the scene admirably. "Sultry Weather for the Harvest" (137), by Mr. Jas. Henry, shows a fine sky effect, and in "Interior" (138) Mr. Oppler succeeds in interesting us in a mere interior of a drawing-room, with no figures and no elaboration of detail. For the accomplishments of some of the members in producing sheer ugliness we recommend the visitor to a portrait of a lady and her children (98), and an illustration of "Rosamund and the Purple Jar" (73). Rosamund was certainly a foolish child, but Miss Edgeworth nowhere hints that she was hideous. But some painters nowadays seem to make a religion of ugliness.

PICTURES AND SCULPTURE AT THE SALON.

As before observed, the number of exhibits at the Paris Salon is much smaller than usual, and if half the pictures that are hung had been refused no one would have missed them. It is the poorest Salon for many years, and it is evident that the leading artists are keeping their best works for the show of modern painting at the great exhibition. Among painters MM. Aublet, Gervais, Cottet, Cormon, Roll, Marioton, Fantin-Latour, and Gerôme, do not exhibit, and M. Harpignies is only represented by a small sketch. Among the sculpture exhibits the names of neither Falguière nor Mercié appear. These omissions alone are significant enough. Nevertheless, among the rooms there are sufficient good works to be found to well repay a visit; only they have to be hunted out.

Among the enormously large canvasses always to be found at the Salon (but which are seldom among the best works) is an immense decorative painting by M. Gorguet, "The Triumphant Entry of Jean le Bon into Douai"; a painting more than fifty feet long, intended for a room in the Hôtel de Ville of Douai, and as a mural decorative painting not unsuccessful. Among the other large pictures M. Béroud is guilty of a piece of allegoric fanfarronade representing the galley of the Ville de Paris splashing along the Seine, drawn by sea-horses and accompanied by the usual crowd of flying and floating figures for such cases made and provided; it is apparently a bid for a municipal commission. Then there is M. Brozik's "Proclamation of George de Podiebrand as King of Bohemia," a respectable historical picture; M. Rouffet's "L'Epopée," Napoléon riding down the line of troops after a victory, a hard picture full of wooden horses; and M. Lalire displays his usual gigantic "hash of nudes," of which the name does not matter, for they are all alike, and are possibly turned out by machinery. One only of the big pictures arrests attention; the "Last Supper," by M. Pinta; a picture cold in tone, indeed, almost colourless, but painted in a serious spirit and showing some fine heads—some of them, however, a little too obviously imitated from Leonardo da Vinci.

The usual sensational scenes of modern life are not wanting; a fatal brawl scene in a cabaret, for instance, painted the scale of reality, and other such misuses of the art of painting. M. Bouguereau, on the other hand, shows his usual refined and sentimental prettiness in "Le Jeune Frère," a half-length of a young woman with her infant brother in her arms; a picture quite perfect in execution as far as it goes; and he has obvious imitators in M. Cavé—"Le Repos" and M. Dupont-Binard, whose little girl, "La Tricoteuse," might be taken for a child of Bouguereau's creation. Among the single figures which have a higher and more poetic aim, we find M. Henner, in "Rêve," a small painting of a nude figure half reclined in front of a mass of dark trees, has returned to the style of composition in which he made his reputation, though unfortunately he has not abandoned his later manner of execution, as if all the outlines of the figure were eaten away by an acid. M. Henri Martin's "Beauté," a curious and original work, both in conception and colour, hardly answers to its title; it represents a figure nude to the waist, and with her face in shadow and her feet hidden in the herbage or whatever she is standing in, with the unfortunate result of making her stature appear much too short. M. H. L. Lévy's half-length "Femme tenant un coupe," a study of a woman in an idealised costume of rich materials, is a very fine piece of colour, her stature appear much too short. Of the single figures of ideal nudes M. Verdier's "Printemps" is pretty and well drawn, but with a conventional pinkiness of flesh-colour. The only picture of this class to arouse enthusiasm is Signor Asti's "Dans les Rêves," a recumbent figure with the face turned away, which is perfectly beautiful both in execution and sentiment. Signor Asti, whose name we do not remember, is a Milanese by birth, settled in Paris.

The poetry of figure-painting in modern subjects is illustrated by M. Ridel, the author of the beautiful work, "Pensées d'Automne," which we noticed in a former Salon. His present work, "Dernières Fleurs," is in the same melancholy tone, and shows two ladies in modern costume seated in a boat in the foreground, a pond and woods forming the background. As in his former picture, the costumes are kept rather subdued in execution, so as not to interfere with the pre-dominant interest of the faces, the tender expressiveness and beauty of which can hardly be over-praised. There is a little defect in the picture, in the treatment (or want of treatment) of the water, perhaps arising partly from the desire to keep the background in subordination; but nevertheless this is a beautiful and intellectual picture. This fine painter seems to be hardly known in England.

Mme. Demont-Breton contributes a picture —"Première Audace, Premier Frisson," of two little boys rather timidly entering a rough sea to bathe, which is of course admirably painted, but hardly one of her best works. M. Debat-Ponsan, on the other hand, has made one of the successes of the year in his fine picture, "La Côte." This shows a ploughed field on the side of a hill, the outline of which forms a high horizon against the sky; in the foreground two oxen strain uphill with a plough driven by a labourer; the picture is a kind of typical representation of rural labour, quite in keeping with the lines from the Georgics appended to it. The same kind of sentiment—the union of landscape with labour — characterises M. Diéterle's small but fine and broadly-handled work "Faucheurs, à la fin du jour." Among the indoor pictures which may be classed under *genre* are two which compel attention from the seriousness with which the subjects are treated. One is M. H. E. Rousseau's "La Prière"; the interior of a chapel in which two rows of monks are kneeling nearly fronting the spectator, the foremost one, kneeling alone, in a rapture of supplication; the varied countenances and expressions of the remainder are finely studied. The other is Mr. Watters's "Il ne m'aime plus," a twilight interior with a single figure of a girl in black with her head bowed on the table before her; it is very simply treated but full of real pathos, and all the details in keeping with the total effect. The artist is a native of Glasgow but now living in Paris, and a pupil of MM. J. P. Laurens and Benjamin-Constant; he does credit to his artistic parentage.

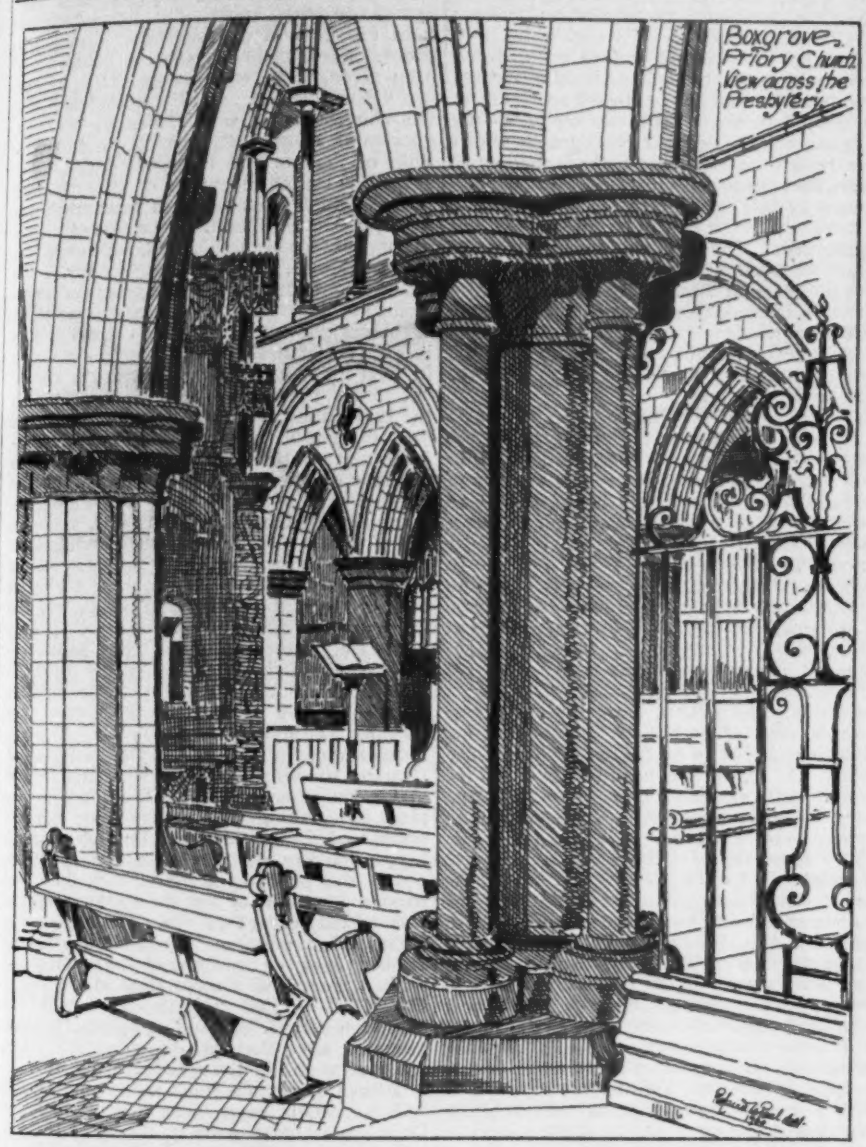
Portraits are seldom the strong point of the Salon; occasionally we find one or two very remarkable ones, but there are none this year of the first order of interest. As a rule French portraits tend towards a too hard and prominent treatment of costume — what we call millinery portraits, of which there are not a few examples this year, the best among them being M. Léon Comerre's portrait of "Mdme la Baronne de S——" in a black dress and adorned with a string of pearls—a sumptuous portrait of a sumptuous-looking lady, but not an essay in the highest order of portraiture. A finer work in an artistic sense is M. Brouillet's "Mdme C. de B——," a three-quarter length of a lady in a fur cloak, in which also much finish is bestowed on the costume, but which is noteworthy also for the beautiful painting of the face, both in regard to texture and colour. A head of an old lady by M. Cain is remarkable for character and expression and delicate execution; and we may mention also M. Lavergne's full-length portrait of a tall, fair lady in a black dress, as dignified and unaffected. Generally speaking the portraits of men in the Salon are superior to those of women; there is no temptation (except in the case of military portraits) to unduly emphasise the costume, and individual character and expression in the heads is thoroughly studied. There is rather a taste at present for portraits of men taken as if engaged in their daily occupations; that of Dr. Léon Blottière, for instance, by Mlle. Favier, who represents him seated before a table engaged with some manuscript; that of Mr. MacMonnies, the American sculptor, by Mr. John Wallace (a French-American artist); and others. M. Benjamin-Constant exhibits one portrait (his only exhibit) of a rather uninteresting gentleman decorated with a green tie and a ruby pin in it. There is a portrait of M. E. Dumont, the architect, by M. Aimé Morot, an admirably painted half-length effectively set off by an accessory in the shape of a piece of richly coloured faience; and a very finely finished portrait of a little girl, by M. Edgar Maxence, is also worth special notice.

Though there is perhaps no work representing the highest type of achievement of French landscape-painting (which means the highest in the world), there are a fair number of examples of excellent pictures of this class —pictures in which a scene is handled with a distinct purpose in regard to effect and feeling, not merely with the desire to produce a pretty scene or to renew a stereotyped effect. Such are M. Bertrand's "Panniers en fleurs," a tree and meadow scene treated in a broad manner but with great attention to the colour of foreground and middle distance vegetation; M. H. Biva's "Dans le parc de Villeneuve-l'Etang," a painting in which a wooded landscape forms the background to a mass of bright flowers—a mingling of flower painting and landscape; M. Crémieux' "Soliel et Poussière," a powerful rendering of the effect of strong sunshine in a southern landscape; M. F. Maury's "Sous bois, à Gesse," a picture which strongly recalls the manner of Diaz; M. Mourens' solemn idyll "Fin de Jour, fin d'Eté, fin de la Vie"; M. Yarz's "Le Soir—environ d'Aix-en-Provence," a valley with one side in shadow and the other lighted by the sunset—simply a view on the outskirts of a town, with the high road running down the centre of the composition, but treated so as to give a poetry to the scene. M. Simonnet's "Le Calme" is a fine moonrise scene, but not equal to some of his works in previous Salons. The most important landscape of the year, in a sense, is M. Didier-Pouget's large painting "Environs de Gargilesse," a view from a high foreground over a plain with a river winding through it, and a hill and plateau in the middle distance; but this gifted painter is rather in danger of becoming a panoramist. We find here much the same elements as in his last year's work; the brilliant and strong treatment of the foreground, the misty light over the lower ground in the middle distance, the sunlight on the elevated plateau; all this is most beautifully given, but we have had the same effect before, and the picture, so to speak, takes to pieces too much; there is a want of wholeness and unity about it, though it must be admitted that if it appeared at the Academy, it would probably kill every landscape there. The official taste for topographical landscape is indicated by the purchase for the Department of the Seine of M. Maurice Chabas' "Le Plateau de Gravelle," a landscape in an excellent style but purely a "view."

Among sea pictures there are the usual horrors, varied by one or two better attempts, M. Chabanian's "Le Vague du Soir," for instance, M. La Villette's "Le Roc Vidy," and a small picture by M. Rudeaux, "Coucher de Soleil en Mer," a very dark rough sea with a wild sky, which is really fine, and quite beyond the usual run of French "marines."

Of military pictures, which are rather a specialty with the French, there are fewer than usual, but there is one admirable one by M. Petit-Gerard, "L'Attaque," where a group of officers stand on a knoll in the foreground and watch a large body of troops marching past in long lines extending in perspective from the spectator to the middle distance; the object of attack is not seen, we have only the spectacle of these long ranges of men marching past towards victory or defeat, and as a piece of realism the picture is in this sense very impressive, the more so from the every-day matter-of-fact way in which it is treated, and the total absence of heroics.

As we have already indicated, the works in sculpture are both less numerous and less interesting than usual. The numbers had not been affixed to the works, but the principal ones could mostly be identified with their titles in the catalogue. Among the larger works



consisting of groups of figures is M. Maillard's "Monument to the Memory of Breton Soldiers and Sailors," belonging to the town of Brest; it is like a good many other works of the kind—men fighting and dying and a winged figure encouraging them. M. Desca's rather theatrical group of Christ, Pilate, a Roman soldier, and a Jewish rioter, is a more pictorial than sculptural conception. M. Hugues's fountain group, "Amphitrite," was only in process of being erected at the time of our visit; everything is backward this year. Among other prominent works are M. Greber's "Mort du Chef," two nude figures, one supporting the other who has been wounded; M. Breitel's monument to Dr. Rochard, a column with an early French capital carrying a portrait bust, while a draped figure of a woman (bronze) stands by—rather a commonplace work; and a monument by M. L'Hoest consisting of a stele with figures on each side of it representing "Souvenir" and "Meditation"; this is a fine work of its class. Among works other than monumental M. Vassélot exhibits a very beautiful one "La Pureté au-dessus des Vices"; "Pureté" is represented by a nude figure holding up a gilded lily; the face, which has much individual character, is exactly suited to the proposed subject, and is a fine piece of sculptured expression; the "Vices" are symbolised by the figures in a bronze bas-relief around the base of the work. M. Coutheillas has a new idea for sculpture in illustrating the fable of "The Oak and the Reed" by two symbolical figures, but, as might be expected, it is too violent in action for sculpture. Mdlle. Diéterle exhibits a figure of "A Sower," which looks like Millet's well-known figure put into plaster; it looks sculpturesque enough, though, which cannot be said for M. Jean Boucher's unfortunate treatment of "Summer" in a realistic clay group of a peasant woman and child sitting at the door of their cottage, and the husband looking out of the window: an utter misuse of the art of sculpture. Among works that are really sculpturesque is a beautiful recumbent female figure in marble by M. Varenne, "La Fin d'un Rêve"—a good example of the poetry of sculpture, unfortunately less illustrated this year than we usually find it at the Salon.

BOXGROVE PRIORY.

IN further illustration of the description of Boxgrove Priory in the *Builder* of April 7, we give a view of the interior of the presbytery looking across it from the altar platform at the east end of the south aisle. The extensive use which has been made of Purbeck marble in the columns, both small and large, of the nave arcade is shown, and the curious "straight-sided" arches in the clearstory. On the left the angle of the De la Warr chantry appears, and between the columns on the opposite side is one of the two Perpendicular windows inserted in the north aisle on either side of the vestry. The illustrations already given show the Norman work of the nave, the Transitional work of its western portion, and the junction between it and the Early English work east of the crossing. The present view completes the series with the Early English work of the presbytery.

FRENCH GOTHIC SCULPTURE.*

IN all the controversies about the respective merits of French Gothic and that of our own country it is generally admitted that the French builders excelled in the treatment of the entrance end of their churches. In the natural fitness of things, this should present at a distance a conspicuous and imposing effect, while on a nearer view the actual portals should appear wide and inviting. To this general idea the French architects of the twelfth and thirteenth centuries gave architectural expression in a fitting and noble form. Their deeply-recessed arches are strongly effective in light and shade, the portals themselves, with their widely-splayed jambs, seem to invite the whole multitude of men outside to enter, while the display of sculptural enrichment, for which they are made the opportunity, gives them a significance and interest above every other part of the structure In other countries Gothic buildings too often miss this effect. In our own case we had begun well with the early Norman western front of Lincoln Cathedral, which embodies the grandest conception of a Romanesque façade in Europe. The idea of Lincoln was repeated on a smaller scale at Tewkesbury, and adopted in the early pointed west front of Peterborough, but the bold scheme of recessing was allowed to drop, and the majority of English Gothic façades, as for example Salisbury and Ripon, are flat and poor in effect, with small doorways that hardly tell as elements in the architectural composition. The display of sculpture on these façades is as a rule insignificant. That this was not due to want of capacity in our mediæval sculptors, is proved by our unrivalled series of sepulchral effigies so abundant in country churches as well as in the greater edifices, which in their general style and their execution surpass anything of the kind to be seen in other lands. Our decorative sculpture on exteriors, however, partly perhaps owing to climate, never developed to the same extent as in France. Our chief effort, the western front of Wells, is hardly monumental in character, and looks too much like an enlarged screen or reredos with figures disposed about it in niches. It is not, like the great French façades, the imposing outward expression of the character and structure of the building of which it forms the frontispiece.

The subject of this paper is the relation of French Gothic sculpture to the structure it adorned, rather than its characteristics from the purely sculptural point of view. The artistic merit of the pieces as studies of the figure and drapery, their expression in gesture and countenance, the facility and finish of the execution, can be judged of by the specimens shown in the illustrations, and it should be understood that the work is not what we should call in the present day mere mason's carving, only made to look suitable for its place at a distance. It possesses in large measure this suitability, this decorative effectiveness, but over and above this there are fine artistic qualities in the works. The figures are well-proportioned, elastic, and graceful, the draperies are simply and nobly cast, and Viollet le Duc is right in claiming for some of the finer single figures at Reims or Amiens a place beside masterpieces of the Greek chisel. The central figure of the three shown in pl. vi. is specially singled out by the author of the *Dictionnaire* for comparison with the statue of Mausolus in the British Museum. In their expression of tender, but fresh and unaffected, sentiment the works of the best period possess an ineffable charm. Later on a certain mannered grace and a sentimental, almost simpering, amiability characterise Gothic sculptured figures, but these symptoms of the decline are nowhere yet apparent in the noble compositions of the twelfth and first half of the thirteenth centuries, such as the western portals of Chartres, Amiens, and Reims, and the northern façade of the last-named cathedral. The well-known Mary of the Visitation, from the central portal at Reims (pl. vii.), is pre-eminent for its classic dignity and repose. The amplitude of the modelling is quite Greek in feeling, but the sculptor can hardly have seen any antique sculpture better than a Roman sarcophagus.

The merit of the artistic achievement involved comes into view when we compare in point of date this French Gothic sculpture with the more famous productions of the schools of Italy. The western portals at Chartres (pl. iii.) are clearly contemporary with the lower part of the towers, which, belonging as they do to the earlier church burnt down in 1195, were in active progress in the middle of the twelfth century. How long before 1150 the sculpture may date is a matter of controversy, but Dr. Vöge, who has published an elaborate study of it,* is inclined to place it about 1130-40. There are other portals of twelfth-century work, and the great compositions at Amiens and Reims belong to the

* An address delivered before the Edinburgh Architectural Society, March 14, 1900, by Professor Baldwin Brown.

* "Die Anfänge des monumentalen Stiles im Mittelalter." Strasburg. 1894.

early and middle part of the thirteenth. During all this time Italian sculpture was sunk in barbarism, and its best works, the reliefs by Benedetto Antelami, at Parma, of the end of the twelfth century, are achievements of a very humble order. The revival in Italian plastic art does not begin till the latter part of the thirteenth century, and at that time, and all through the fourteenth, it was practically confined to decorative reliefs, in the best of which it is difficult not to see, with M. Marcel Reymond, the influence of the earlier Gothic sculpture of France. It was not till the beginning of the fifteenth century that the statue in the round on a monumental scale makes its appearance in Italy. In France, on the other hand, the carvers of Reims in the thirteenth century had enriched the exterior of their church with no fewer than 211 statues in the round between 10 and 13 ft. high, all imbued with the artistic qualities already spoken of. The profusion of fine sculpture in the French cathedrals is indeed one of the most striking points about this phase of art. On the exterior of Chartres there have been counted over 4,300 human and animal figures of various sizes, some, of course, very small. The western portals alone have 719. The total number at Reims is 2,300. In the archivolts alone over the central of the three western doorways at Amiens, shown in pl. i., there are close on 100 figures, and the sculptured quatre-foils on the plinth of the three porches, some of the reliefs in which vie in their exquisite grace with the work of Andrea Pisano at Forence, number 120.

Regarding this display of sculpture from the point of view of its relation to the architecture, we note that the designer had to deal with the same fundamental problems of decorative art which confront the ornamentalist whether he is concerned with a cathedral or a fibula. The selection of the enrichment, its amount and its placing, are all matters in which the procedure of the Gothic designer possesses interest and instruction for the worker of to-day. The general idea of lining the sloping jambs of the doorways with saintly images is well conceived, and so, too, are the decorative schemes by which all the representations in a monumental composition are united in thought. The conception at Amiens (pl. i.) is based on the text about the household of God being built upon the foundation of the apostles and prophets, Christ Jesus Himself being the chief corner-stone. The well-known figure of Christ on the *trumeau* that divides the central doorway is flanked by six Apostles on either side, beyond whom are two major prophets, while the minor prophets stand in a line on the face of the buttresses between the doors all across the front. These colossal forms, some finely characterised, are highly appropriate as guardians of the sacred house. The "Nahum," the minor prophet at the north corner of the central porch, seen high up on the left in the illustration, is warmly praised by Ruskin in his "Bible of Amiens." The crowning work of the administration of Christ, the Last Judgment, is displayed in the tympanum, and the same theme runs through much of the statuary of the archivolts overhead. The quatrefoils on the plinth below the colossal figures have relation to these, and admirable powers of invention are shown in the representations of scenes or ideas out of the writings of the prophets.

Whether or not the actual carver was responsible here for the designs, they exhibit an acquaintance with the Vulgate text of the minor prophets that puts the biblical knowledge of most moderns to shame. Another example of suitability of motive is to be noted at Reims. Here the gracefully-designed pinnacles that surmount the piers from which the flying buttresses start are worked into the form of tabernacles, in each of which stands a noble angel with outspread wings. One of these angels is shown in pl. v. This idea of a company of celestial guardians of the shrine, newly alit on their perches from the upper air, is a highly poetic and effective one.

It is significant of the over-mastering position held at the time by architecture that the sculpturesque elements in all this work are kept in severe subordination to the decorative purpose. From the point of view of the sculptor the representations are too abundant, and therefore crowded. He would in the interests of his own art have chosen fewer motives and displayed them with more amplitude and freedom. He would hardly have elected to dispose of his figures in the archivolts, where they cluster overhead, often in impossible positions, as thickly as leaves; while he might from his own standpoint have objected to his beautiful statues being distributed in the upper stages of the building, where their details cannot be seen by the spectator on the ground below. It is really owing to the excellent series of detailed photographs which have been taken of some buildings, notably of Reims, that the astonishing variety and expressiveness as well as beauty in the heads of some of these upper figures can be understood and appreciated. There is a series of kings at Reims where the faces are full of character. A youthful David and a Christ as pilgrim, on the west front at Reims at the level of the great rose window, may be singled out as of special interest (pl. viii.), but few who enter the building have any idea even of the existence of figures of the kind.

The architectural influence is supreme also in the pose and gesture of the figures on the jambs of the portals. These are often in groups of two or even three, and in the turn of the head or the action of the hands there is an indication of their connexion which is sometimes emphasised by more definite gesture or action. These are never allowed, however, to go beyond a suggestion, lest the severity of the architecturally regular pose should be broken. At Amiens, on the jamb of the right-hand portal, which is devoted to Mary, there are three groups of two figures each, giving the Annunciation, Visitation, and Presentation of the Child; the figures turn two and two towards each other, but so slightly that the pillar-like simplicity of the forms is not disturbed. At Reims the northern jamb of the central portal exhibits a group of four, Joseph, Mary, Simeon, and Anna, that is treated with the same severe reserve.

This subservience of the figure sculpture to its architectural setting is most marked in the case of the earliest and most interesting of the sculptured façades, that at the western front of Chartres. Whether this dates a little before or a little after the middle of the twelfth century does not matter; it is certainly Gothic in feeling. It is difficult to understand how Dehio and von Bezold can term it one of the *noch rein romanischen Beispiele*, for the copiousness and animation of the work, which, in spite of obvious conventions, exhibits in parts a curious naturalism, as well as much freshness of feeling, are quite in the temper of the coming age. The life-like and spirited heads of the figures on the jambs, together with some of the smaller figures in the archivolts and the right-hand tympanum, are most fascinating in their *naïveté* and force. One of the illustrations (pl. iv.) shows the "Visitation" from the tympanum, and one of the "Elders of the Apocalypse" from the archivolts. The intimate realisation in the group, and the details and the drapery in the "Elder," are evidence of the life that was in the work. How expressive is the difference in the treatment of the hair in Elizabeth and the crowned Mary! How studied the folds of the dress and mantle of the male figure, reminding us as they do of a piece of antique Greek sculpture! Some of the signs of the zodiac in the archivolts are rendered with more spirit than in any other of the abundant reproductions of the theme, and the same applies to some of the "Arts and Sciences" in the right-hand archivolts.

It is instructive to compare the "Visitation" on the western front, of the twelfth century, with the treatment of the same theme in the later lateral porches of the end of the thirteenth. Pl. iv. shows the two side by side. In the later group (the one to the left), the two faces are almost exactly the same, the actions are without significance, and the drapery is all worked into weak flowing curves, reminding us of the flourishes of the caligraphist. This is the merely conventional grace in which later Gothic sculpture lost itself.

A good deal of the interest of the early work at Chartres (pl. iii.) resides in its conventions. As the prototype of the great sculptured façades of the High Gothic period, it suggests questions about the source and meaning of the decorative scheme it was the first to establish as classical. It will be noticed how the designer has given value in his composition to the central portal by diminishing the number of its horizontal divisions as compared with the sides. The tympanum has two instead of three of these, and the figures in the jambs have more length because the canopies seen over the figures in the side portals are omitted in the central one. One curious feature, the remarkable elongation of the figures on the jambs, can be understood from the general considerations already adduced. Far-fetched explanations of this have been given, some writers even taking refuge in "that blessed word" Byzantine; but the convention is simply due to the exigencies of space. The architectural dimensions of the parts of the porch really determined the length and width of the sculptured figures, which from the neck downwards are highly conventionalised. The contrast between the appearance of these bodies, which look like fluted columns, and the strong vitality of the heads is almost startling. The severely circumscribed contours have a technical reason. Each of the upright figures with the column behind it is cut out of a single block of stone, square in plan but set in the wall with the corner outwards. The figure, therefore, lies all within the two planes of the faces of the block that meet in front at a right angle. Nothing projects beyond these planes, but as little as possible of the stone is cut away, and the original form of the block is in parts visible. This method of working adds to the sameness of the figures and hence to their architectural character. It may be noted that this remains the standard method in the later thirteenth century work at Amiens and Reims and the transept porches at Chartres. Projecting parts are, however, in the later work frequently added in separate pieces fastened with dowels. The sculpture of the upright figures on the blocks for the jambs was executed in the *chantier* not *in situ*. There is a panel in one of the stained-glass windows at Chartres showing masons at work, and we see that while some are shaping the stones for the piers or vaulting ribs, others have in hand sculptured figures of kings in high relief on long pillar-like blocks of stone, evidently for use in the jambs of a porch. On the other hand, a good deal of the decorative sculpture was actually carved *in situ*. The report of a technical commission appointed in 1843 to examine into the condition of the portal of the south transept at Amiens (that of the *Vierge Dorée*), states that "all the work, with the exception only of the standing figures, has been executed after that of the masonry." The representations in the archivolts are each cut in a block of about a cubic metre in bulk, and "all the details, even those that are most detached, have been taken in the same stone of which they are still integral parts." In a paper on this very question, M. Enlart stated some time ago that both methods, of sculpturing *avant pose* or *in situ*, were in use in the Gothic period. MM. Jourdain and Duval, in their analysis of the Amiens portals in the eleventh volume of the *Bulletin Monumental*, state their conviction that the quatrefoils on the plinth of the western porches were sculptured by the first method, which, if a fact, is a little surprising,

To return to the Chartres statues, the question of chief interest about them concerns their position. How did such figures ever come to be placed as we find them? They are suspended in the most curious fashion in front of the columns, with nothing under their feet but a slight conical projection from the shaft, and they clearly seem to offend against that very salutary and generally observed rule, that the sculptured human figure should not be placed in a position glaringly impossible to a real personage. Yet this somewhat forced and awkward arrangement, seen for the first time here at Chartres, is almost universal in later work, and the numerous iron stanchions, which have had to be added at Reims and elsewhere to sustain the figures, show that the absence of support beneath is a technical, as well as artistic, solecism. This leads to the inquiry into the reason and the *provenance* of this system of placing the figures, and Dr. Vöge has devoted a good part of his interesting, but not always quite convincing, book to working out a theory of a derivation from the sculptured portals of Provence, such as St. Gilles and St. Trophime at Arles. The latter portal is represented in pl. ii. In these, classical influences are so strong that a range of free standing columns like those of an antique portico, or like the atrium columns of the Early Christian basilica, crosses in front of the wall flanking the doorway, while in recesses on the wall stand full-length figures of saints in relief. Dr. Vöge, who finds affinities in style and treatment between the sculpture at Arles and that at Chartres, thinks that the shafts on

Mural Decoration for All Saints' Church, South Acton. By Mr. Oswald Fleuss. (See page 340 ante.)

the jambs of our Gothic portals are these same classical columns now placed against and touching the wall, while the figures correspond to those in the recesses, but have moved from their niches behind the columns to a position in front of them, where they have attached themselves in a suspended attitude to the shafts. The reason for this last change is difficult to see, but it may be due to the desire to bring the figures out into fullest prominence. Dr. Vöge's demonstration of the debt of Chartres to Provence may not be wholly satisfactory, but it deserves notice as a painstaking effort to account for a very curious artistic phenomenon, which has given rise to considerable comment. The system of placing the figures, whencesoever it was derived, is open to grave objections, and suitable as is the general motive of the saintly forms lining the portals, the scheme by which it is carried out is certainly unsculpturesque, and may be taken as an additional proof of the predominance at the time of the mistress art of architecture. The achievements of the French Gothic carvers are, as a whole, of splendid artistic value, and offer examples of decorative treatment on a monumental scale of the highest interest. The errors of judgment that can be detected in their work may also be instructive to the modern designer.

MURAL DECORATION, ALL SAINTS, SOUTH ACTON.

THIS is a continuation of the decoration for this church, designed by Mr. Oswald Fleuss, of which we gave two other bays in our issue of April 7.

COMPETITIONS.

ALMSHOUSES, PUDSEY.—In a local competition for designs for the six almshouses to be erected at Pudsey with the money of the Thomas and Sarah Lund Charity, the first premium of 15*l.* has been won by Mr. C. S. Nelson, Leeds and Pudsey, and the second, of 7*l.* 10s., by Mr. E. P. Peterson, Bradford and Pudsey. The houses will be erected in Cemetery-road, Pudsey.

BRITISH INSTITUTE OF CERTIFIED CARPENTERS.—The monthly meeting was held at the Carpenters' Hall on Saturday, April 7, when, in the absence of the President, Professor T. Roger Smith, F.R.I.B.A., Mr. J. Clark, Vice-President, Tunbridge Wells, occupied the chair. Included in the business of the evening was the selection of a badge to be worn by the members when visiting works of interest. After the business of the meeting had been concluded, a paper by Mr. W. F. Sweett, of Battersea, was read on "Air-Tight Case Making," and demonstrated by drawings with details of various cases, together with specimens of joints, bars, tools, planes, &c.

MAGAZINES AND REVIEWS.

THE *Art Journal* contains an essay on the Decoration of St. Paul's by Miss Minna Gray, which is in fact really a kind of counterblast to the criticisms which have been made on the work that has been done there. Much of this was no doubt captious and exaggerated, but we fear that Miss Gray does not understand the real ground of objection, from an architectural point of view, to some of the work done at St. Paul's and some of what is further threatened. In fact, the article is simply a panegyric. It derives some value from the beautiful illustrative sketches by the late Miss Edith James. James Maris is the subject of an article, and Mr. Baldry writes a short article on "The Pictorial Possibilities of the Stage," which is really a disquisition on the "Midsummer Night's Dream" scenery at Her Majesty's Theatre.

The *Easter Art Annual*, published in connexion with the *Art Journal*, is devoted to the consideration and illustration of "The Decorative Art of Burne-Jones," a fascinating subject enough; but we wish that, as far as the literary portion of the work is concerned, it had been treated with more critical discrimination. To say that Burne-Jones's decorative treatment of the human form enables his work "to hold its place unrivalled in the whole range of art since the world began" is absurd exaggeration. He treated decoratively one particular ideal of the human figure which never varied in character and expression, or rather which was destitute of expression, and which was often weakly drawn and wrongly proportioned. His decorative works are beautiful in spite of these serious weaknesses, but it is useless to ignore their shortcomings. On the back of the very page on which the words above quoted occur is a sketch of a figure of a knight (fig. 57) which is more than eleven heads high, and ridiculously weak in attitude and physique—a knight who would never have had the capability to do a feat of arms. The fact is, Burne-Jones's genius was essentially of a feminine cast, and he failed always where force and vigour were required. Many of the designs illustrated are however very beautiful in a monotonous way of their own, and are truly decorative in the sense that Burne-Jones always studied beauty and balance of line in his designs.

The *Architectural Review* (Boston), Vol. VII., No. 31, contains an article by M. Jean Schopfer on "American Architecture from a Foreign Point of View," which is of some interest. Among the things which astonish the foreign critic are two especially; the inflammable character of the private houses, "which seem as though prepared on purpose for fires," and the habit of building even the finest and most costly houses, the abodes of millionaires, up to the edge of the street pavement. "Not one of the kings of finance, petroleum, or railroads possesses the smallest bit of a garden adjoining his city house. He lives in the noises of the street, like the most needy of his fellow citizens." This is a point in New York City architecture that we have not seen commented on before. The plates of this issue are entirely devoted to drawings of some of the buildings of the Pan-American Exhibition at Buffalo, by Messrs. Peabody & Stearns. These appear to be very rich and yet refined specimens of design for temporary exhibition buildings.

The *Berliner Architektur-Welt* contains a number of illustrations of the painted wall decoration in one of the rooms in the German building at the Paris Exhibition, designed by Herr Bernard Schnaede, of Berlin. Although these are not what English artists would altogether sympathise with, there is a great deal of vigour and invention in them. The number contains views and plans of the new Royal Stables building at Berlin, of which Herr Ihne is the architect. It is an ordinary "classic" structure, but of good proportions and appearance, and contains some effective decorative sculpture in the large niches in the rusticated ground story in each wing. Unfortunately, the plan shows that neither the projection of the principal façade, nor the blank walls and sculptured niches just mentioned, have any relation whatever to the plan.

The *Antiquary* continues "Quarterly Notes on Roman Britain" by Mr. Haverfield, and "Curiosities of and in our Ancient Churches" by Mr. Feasey. Under the heading "England's Oldest Handicrafts" Miss Robson writes of the "Makers of Weapons."

The *Artist* calls attention to a remarkable work by M. Lambeaux, sculptor, of Antwerp, a gigantic alto-relief crowded with figures emblematical of the Human Passions. It is said to have produced a great sensation, and is apparently being taken on a European tour; but though the illustrations given of portions of it are striking enough, we are rather inclined to think that it is one of those pieces of sculpture which appeal to the public rather on account of its meaning and suggestion than on account of its artistic execution; it seems to us rather rough work, though with an important idea underlying it.

The *Studio* contains an article on "Suggestions for the Improvement of Sporting Cups and Trophies," a sphere of art (?) in which improvement is certainly urgently required, but is it any use to try at it before we have improved the taste of sporting men, who of all classes of the community have perhaps the worst taste in art? Mr. Ashbee's designs, moreover, are not successful, because they do not suggest sporting subjects, and are much more like church plate; Mr. Reynolds-Stephens's "Sketch Model for a Yachting Trophy" is more to the purpose; his "Yachting Cup" fails from a want of certainty and definiteness of

form. The same issue includes a number of designs for the decoration of a bedroom, by Mr. Frank Brangwyn; these are interesting, though we do not like the metal-work; it is, however, in the new taste, which is for all kinds of formless twists and twirls into which there goes little that deserves the name of design.

The *Nineteenth Century* contains an article by Signor Giacomo Boni on "Excavations in the Roman Forum," from which a good deal of information can be extracted, but which is unfortunately written in a very rambling and confused (or confusing) manner.

The *Contemporary* contains a truly beautiful and thoughtful article by "Vernon Lee" under the title "The Art and the Country; Tuscan Notes"; the main point of which is that the art of a special time and country is not to be fully understood without knowing the country itself—the character of the landscape, the feel of the air even. Having started on this basis, Vernon Lee proceeds to many interesting critical remarks in detail on the quality of Tuscan architecture and sculpture. Even if the reader does not agree with it all, the whole article is worth reading, as the expression of a rare intellectual perception, in an admirable literary style.

Scribner contains a very well written article signed "Ida M. Tarbell," on "The Charm of Paris." The writer recognises the fact that much of interest has been destroyed in Paris in the course of recent improvements, and speaks with feeling of the attachment of old residents to their old quarters. On the other hand, much of the attraction of Paris "is due to perfection of municipal housekeeping. Paris is not run in the interests of a political party, and as a consequence she can have clean streets, good lighting, good drainage, and plenty of water." The author is certainly mistaken, however, in the latter point; Paris has not, and never has had, an abundant supply of water; that has been the constantly recurring difficulty. Mr. Brownell's article on "John Ruskin" should be read by some of the infatuated English worshippers of this sham prophet. "Complete surrender to emotion, which is, of course, the source of whim and fanaticism, has resulted, in Ruskin's case, in a body of criticism most of which is never seen by competent critics without either exasperation or contempt." That is the plain truth, and some day people in England will find it out. Mr. Russell Sturgis, writing under the heading "The Field of Art," is equally trenchant and contemptuous; we may quote his concluding words:—

> "When a man who is by nature at once a poet and a thinker, a man so removed above the ordinary vices and foibles of humanity that he might be considered as by nature a recluse and an ascetic, although living among men—when such a man, having abundant means at his disposal and using them with the utmost intelligence and liberality, purchasing works of art in many departments with an enthusiastic love for what he buys and a perfect willingness to share it with his friends and with the world—when such a man devotes, as he says, ten years to be able to teach the truth about fine art to the world, and is able as the result of all this to give only bold assertion where no assertion is possible, and the declaration as fact of what was never anything but whim—then, indeed, the world has reason to regret that John Ruskin ever saw or thought of a work of fine art in his life. If he had remained a writer on morals and on sociology, he might have made strange remarks upon fine art and have done no harm; but the mischief his works have wrought in keeping a whole world of diligent readers out of touch with that other world of art producers, old and new, is apparently an irreparable mischief."

The *Century* gives an engraving by Mr. Cole from Constable's "The Thames," but the style of engraving hardly suits a picture with so much small detail in it. We have an article by Mr. W. A. Coffin on the work of Mr. French, the author of the equestrian statue of Washington presented to France by American women. A finer work, among those illustrated, is the subject from the Milmore Memorial—"Death staying the Hand of the Young Sculptor." Mr. Barnard contributes an article on "The Industrial Revolution of the Power Tool."

The *Revue Générale* contains an article on the excavations at Priene, by M. Alphonse Roersch.

The *Ruskin Union Journal*, No. 1, is one of the symbols of the childish worship of Ruskin, which seems to have received a fresh impulse by the event of his decease. Judging from the utter literary weakness of the first number, we should think it likely to be also the last.

Knowledge contains an article by Mr. Grenville A. J. Cole, "Across the Downs," consisting of some comments on the geological character and the history of chalk uplands of England; and an article on "Earthquake Sounds" by Mr. C. Davison, who has made earthquake phenomena his special study.

The *Pall Mall Magazine* contains, under the heading "Capitals of Greater Britain," an illustrated article on Kingston Jamaica, also a well-written article on the Paris Exhibition.

The *Home Counties Magazine* contains an article by Mr. Edwin Freshfield, "Notes on Church Plate in the Diocese of London," which is to be continued, and an article on "Kew its Palaces and Associations," written and illustrated by Mr. Leonard Summers.

The *Essex Review* (quarterly) contains an illustrated article on Essex brasses.

The *Architects' and Builders' Magazine* (New York) has an article with illustrations of a new idea in church building, for hot countries. This is a church with a roof auditorium with a tent covering, for use during the summer months. It is designed by Messrs. L. B. Valk & Son, architects, of Brooklyn and Los Angeles. A clergyman in Brooklyn, we are told, has adopted the idea.

The *Engineering Magazine* contains articles on the Jungfrau electric railway and on the Cape to Cairo railway; and also an article by Mr. G. A. Burt on the Isthmian Canal projects, a comparison between the Nicaragua and Panama schemes, summing up in favour of the latter. One never knows, however, what engineering, or contracting, or political interests are involved in expressions of opinion on this subject.

Feilden's Magazine continues the subjects of "Modern Appliances in Gas Manufacture," "The Great Central Railway," and "Pneumatic Tools and Appliances."

The *Quarry* contains an article on "The Kilsythe Whinstone Quarries."

We have received also the *Gentleman's Magazine*, the *Genealogical Magazine*, and the *English Illustrated Magazine*.

WARMING AND VENTILATION.*

I HAVE the honour to-night, at the request of your Secretaries, to read before you a paper on "Warming and Ventilation"—a subject so vast that it will be impossible to do anything but touch the fringe thereof, but at the same time one that always has given, and always will give, rise to discussion, owing to the extremely divergent views held by the many scientists and specialists with regard to the best means of procuring efficient results. But however this may be, it is not difficult to agree upon the definition of good ventilation as the efficient, constant, and uniform change of air without draughts, by which pure air is substituted for foul, and good warming as the efficient, constant, and uniform maintenance of temperature, whatever may be the temperature of the atmosphere.

I have divided my paper into three parts:—1. General. 2. Mechanical and natural ventilation. 3. Special ventilation and warming as applied to various classes of buildings.

1. *General.*—It is impossible to understand the principle of ventilation without considering the composition of air, and the changes and movements that take place in the same under varying conditions. It is not my intention to show any of those weird and comic pictures which ventilating experts (and they are legion) give in their books of the passage of air through rooms, and of the effect of breathing and the consumption of gas on the air of rooms, but I will endeavour to explain the effects by words.

The principal constituents of pure atmosphere are as follows:—Oxygen, 20·93; nitrogen, 78·19; carbonic acid gas, ·04; water vapour, ·84. Traces of ammonia, nitric and other acids, and organic matter in suspension, are to be found, but for our purpose they may be ignored. The nitrogen plays a neutral part, and is of little value either way for good or evil, and its principal work appears to be to dilute the oxygen.

Air is not a chemical compound, but only a mechanical mixture, and its weight is about $\frac{1}{800}$th of that of water. Carbonic acid gas, which is the chief impurity, is about half as heavy again as air, but by the law of diffusion of gases it is equally diffused throughout the atmosphere.

It is often roughly said that when we breathe we take in oxygen and breathe out carbonic acid gas, but more truly we may say that the exhaled air contains 100 times as much carbonic acid gas as the fresh air we breathe in. As it is exhaled at a temperature of about 98 deg. it rises upward, and if it can be carried off before it cools and falls, or by diffusion gets mixed with the general atmosphere of the room, the air in the room will not retain more than its normal proportion of carbonic acid gas. And wherever you find excess of carbonic acid you are almost sure to find organic matter in suspension and excess of vapour. It must also be remembered that ventilation which has proved efficient during the day may be greatly lacking when the lights are turned on, because each ordinary gas jet with its sulphurous fumes vitiates the air to the extent of three or four persons. We may therefore sum up by saying that efficient ventilation has to remove the various impurities which come into the air, and to supply fresh air to take the place of the foul, to the extent of between 2,000 to 3,000 cubic ft. per hour for each person, which is the amount required by a person in full health.

The question of warming naturally goes with that of ventilation, in that one is generally the assistant of the other. In considering this question of warming, the most important factor regulating the same is the difference in temperature between the indoor and outdoor air. Air is practically a non-conductor of heat, and radiant heat passes through the air to objects in the room without appreciably warming the air itself.

The temperature of the human body is about 98 deg., and therefore the ultimate object of heating is the provision for the abstraction of heat from the body without overtaxing physical capabilities. This dispersion of heat takes place either by radiation, by conduction to the air immediately in contact with body, or by evaporation of moisture. The material of the walls, the amount of window space, the climate and position all influence the loss of heat. Again, as ventilation causes a rapid change of air, this air has to be heated, so that the temperature of the room may be maintained at an even temperature. Therefore, it is necessary to calculate the units of heat required where warming and ventilation are required to be perfect.

Of course, the ordinary open fireplace is the one great source of warming, and is generally sufficient in a dwelling-house, but in large institutions and the like, this warming has to be supplemented by a complete system either by hot-air, or steam heating, or hot-water heating, on the low or high pressure systems. Where mechanical ventilation is in use, the warming and ventilation can be calculated and regulated to meet all conditions, and therein lies the great theoretical advantage of the system. Let us now consider how the results of good ventilation and warming may be effected.

2. *Good ventilation* may be obtained by two very different systems:—

(1.) Natural ventilation.
(2.) Mechanical ventilation.

Dealing with No. 1 first, I propose to further sub-divide this into

(*a*) Automatic natural ventilation.
(*b*) Assisted " "

By automatic natural ventilation I mean the natural current of air through inlets and outlets at will, dependent only on the number of such inlets and outlets and the state of the wind and atmosphere. For instance, if you open a window, or a Tobin tube in a room, with an open fireplace, the ventilation which ensues goes on automatically, and is at most times efficient.

By assisted natural ventilation, I mean the natural current of air through inlets and outlets, assisted perhaps by some mechanical means, though by no means "mechanical ventilation." For instance, a gas jet burning at the bottom of an exhaust air flue helps to induce the upward current of vitiated air; again, small fans working near the ceiling level help to clear the room of smoke, where a plain grating would do the same at a slower rate. Assisted natural ventilation is always required in rooms where smoking is indulged in to any extent, and in laundries or boiler-houses where excess of steam is generated; and the very best means is by fans acting in opposite gables where possible.

* A Paper read before the Architectural Association Discussion Section on Friday, March 30, by Mr. T. Wilson Aldwinckle.

While upon this subject I might say that there is almost another subdivision of natural ventilation, viz., permanent ventilation. This may be obtained by use of fixed louvres of glass or slate or wood or other suitable material. I have never liked the use of louvres. In certain branches of Government buildings I know their use is inadmissible; but, if they are placed at an angle of 60 deg., with bird wire behind, I believe it is possible to make them secure against rain and birds, and at the same time provide a means of permanent ventilation to buildings where extensive ventilation would be rejected either on the score of cost or efficiency.

Mechanical Ventilation.— This can be carried out in two styles—

(1) Plenum system, in which fresh air is forced in;

(2) Vacuum or extraction system, in which foul air is drawn out.

By these systems of mechanical ventilation, air, after being purified, filtered, and warmed to required temperature, afterwards passes into the building. In theory it is excellent, because by an elaborate system the air, after going through various processes, can be delivered into the building to any particular temperature, of any particular humidity, and of any particular purity, without draught of any kind; but in practice it is not all that can be desired. I am afraid that I am greatly prejudiced against it, because I have great faith in the open window in a temperate climate like this; but under this system all windows must be fixed, as the opening of one would destroy the whole system. Then, again, the few examples of mechanical ventilation in this country are not altogether successful. The Houses of Parliament have always been a source of trouble; Pitman's School of Shorthand, to speak from the experience of the scholars, is anything but pleasant; and the same tale is told nearly everywhere in this country. Of course, in the United States there are many very successful examples, but there such systems are a necessity. On the Plenum system the air is driven by fans through inlets well distributed throughout the building, and carried off through the outlets provided at a rate calculated to provide the requisite amount of fresh air to each person who may be in the building. It is my fate to be about to carry out an example of this system in the first class swimming bath of the public baths and washhouses which are being erected for the Vestry of St. Pancras, and I propose to deal fully with this in the latter part of my paper.

On the vacuum system the same effect is attained by the fresh air flowing in automatically to replace the foul air drawn out by fans or other means at the outlets.

Opinions are divided as to the better of these methods, but my advice is avoid both in this country unless circumstances compel.

Most elaborate books and formulæ are issued by Messrs. Key and the Sturtevant Company, amongst others, which give all possible information of this part of the subject, and it is to these I must ask you to turn at your leisure as I must pass on to the second part of my paper, viz., the application of ventilation and warming to various classes of buildings. We cannot do better than start at home, so I will begin with dwelling houses.

3. *Special Ventilation and Warming* as applied to various classes of buildings.

(*a*) *Dwelling Houses.*

The efficient ventilation of an ordinary dwelling house always appears to me to be an exceedingly difficult problem, owing in great part to the facility with which the female sex detect, or imagine they detect, draughts even where it is impossible for one to exist. The ordinary housewife looks upon tobin tubes and other inlet ventilators as an abomination designed for the one special purpose of causing draughts in the house. There are too many people who forget that a little sensible ventilation in your house, especially in your bedroom, is absolutely necessary for good health.

Assuming that the many prejudices of people in their private houses can be overcome, some of the following means of ventilating a dwelling house may be found effective.

All double hung sashes should be provided with deep inside bead on to the wood sill, so that by opening the bottom sash slightly air may be admitted into the rooms at a gentle rate through the meeting rails of the sashes. This provides inlet ventilation to the rooms without draughts.

In addition, Tobin tubes either in the corner of the room or on the "bracket" principle, capable of being regulated by a key, should be placed on external walls, if possible at the junction of the external wall with the internal wall in which the door of the room is situated. These tubes should be painted inside and out, and of zinc in preference to wood.

The provision of warm air ventilating stoves adds greatly to the comfort of the room, and they are of special value in large halls where the warmed air rises from the stove through the whole house.

It should be remembered that in a dwelling house certain rooms are in constant use; for instance, the dining-room, where in ordinary middle-class life the family have all their meals, smoke there, and sit and talk there in the evening. Special exhaust ventilation in addition to the open fireplace is certainly required in such rooms.

The exhaust ventilation in dwelling houses is primarily by means of the open fireplace, but this should be supplemented by means of exhaust ventilators placed close to the ceiling level, leading direct into air shafts running up between two smoke flues, whereby the generated heat in the smoke flues induces a strong upward current in the air flue.

I am strongly against the use of mica flap ventilators, which generally go wrong after a few weeks in spite of the manufacturers' assurance that theirs is the only one in the market that never fails; and while they are in working order they make an unpleasant sound.

Ventilating cornices can be made a great ornamental feature of a room, and at the same time provide an efficient means of ventilation; but ample means should be left for cleaning inside of same at regular intervals, as otherwise they become dust and disease traps.

Let us now consider specially the bedrooms of a dwelling-house. How many there are in small houses without any provision for ventilation! And when one considers that an average room may be taken as about 1,500 cubic feet, and that a person requires 16,000 cubic feet of fresh air for an eight hours' occupation of the room, it is not surprising that without means of ventilation the atmosphere of the bedroom is far from pleasant to anyone entering it before the windows are opened in the morning. I put it in this way because the occupant of the room gets used to it, and cannot notice it to the same extent; and therein lies the danger, for he is breathing in vitiated air all the time without noticing it; by a little sensible ventilation the air could be purified. Every bedroom should, under all circumstances, have an open fireplace and at least one exhaust ventilator near the ceiling level, especially when one considers that at times it is necessary to use these rooms as sick-rooms. This leads me naturally to the next part of my subject, viz., that of hospitals.

(*b*) *Hospitals.*

That the ventilation and warming of a hospital should be as perfect as man can devise is obvious when we remember that the health of the patients depends so much on the regularity of the change and the equality of temperature of pure air.

Mechanical ventilation as applied to hospitals in this country is a matter which commands little respect from me, and I do not intend to refer to it beyond calling attention to the one great example, viz., the General Hospital, Birmingham, and also to the projected new hospital at Belfast, which is to be built on entirely new principles, the development of which is awaited with great interest by all who are interested in my subject to-night.

Mechanical ventilation is, I agree, right; I would almost say a necessary evil, in such climates as those of Germany and the United States, where such extremes of temperature exist, but not in a temperate climate like our own, where it is possible to open the windows of a hospital ward over three hundred days in the year without discomfort or danger to the patients.

Personally, I would suggest the following as the best means known to me of ventilating and warming a hospital ward:—

The inlet ventilation should consist of a series of galvanised iron valvular gratings of size about 18 in. by 6 in., placed in openings in opposite external walls 3 in. above the floor level, one under each window, through which the air would pass over heated copper radiators before entering the ward. Supplementary to these, similar gratings should be placed beneath each bed through which cold air can pass slowly into the ward. All these inlets for cold and warm air to be controlled by valves, and all the gratings in flanged frames and movable, so that the openings in the walls can be easily cleaned at regular intervals. The openings themselves should be lined with glazed bricks or tiles or rendered in cement to a perfectly smooth face.

In addition, ventilating stoves of the type made by Messrs. Hendry & Pattisson, or Messrs. Shorland, should be placed in the centre of the ward with descending flues, the number of these stoves depending on the size of the ward. To these, fresh air is brought from the external wall on one side through glazed brick channel or glazed fireclay tubes in the floor to the air space of the stoves, where the air is warmed before being admitted and diffused into the wards. This air supply is regulated by valves. These stoves should be cased in glazed faïence work and make a picturesque addition to the ward.

Again, the windows should be carried up so that the arch is 3 in. below ceiling level, this being the highest that is constructionally possible, and the upper portion should consist of hopper hung sash, with glazed w.i. cheeks on each side to prevent side draughts, these hoppers being hung at bottom to open inwards and regulated as to width of opening by gearing.

Under normal conditions, by opening these hoppers on opposite sides of wards, one side will act as inlets, the other as outlets. The exhaust ventilation, in addition to the open windows and hoppers, is by means of the open fireplace, in all ways a powerful exhaust and at the same time one that acts near the floor level where vitiated air often lurks.

To supplement this, I should recommend the use of vertical shafts carried up at side of ward well above roof, and terminated with Boyles or other similar ventilator. These shafts should be at least 14 in. square inside, lined with glazed bricks with rounded angles, or trowelled to a perfectly smooth face with Keene's or Robinson's cement, and the upward current of air should be assisted by means of a gas jet at foot of shaft, or, if money is no object, by a steam coil.

Into these shafts there should be two louvred openings from ward, one 3 in. below ceiling level, and one 3 in. above floor level, of size about 18 in. by 14 in., the louvred gratings to the opening being so adjustable by means of brass actuating rod that the upper is closed when the lower is open, and vice versa. The object of this is, that it may be possible to regulate the exhaust ventilation, so that the vitiated air may be carried off either near the ceiling or near the floor at will, as it is found that foul air often lies stagnant near the floor level without rising.

In addition to the open ventilating fireplace, the warming of the ward should be by means of radiators of a simple type, placed as before described, on the low-pressure system, easily controlled so as to keep the ward at uniform temperature day and night. It is important that the system should extend to the annexes and administrative part, in order that the air being at the same temperature throughout, no draughts may occur when doors are opened into the ward.

This finishes my description of ventilating and warming hospitals, but before passing to the next part of my paper I wish to refer to a system of warming wards which is in use in the celebrated Eppendorf Hospital, Hamburg. This is effected by means of a warmed floor. Steam heating pipes are laid in channels about 3 in. wide beneath the floor, which is of terrazzo, and the air in the channels is thus thoroughly warmed, and communicates its heat to the ward floor. No air from the channel passes into the wards. In this way the temperature of the ward at and about the floor level is kept uniform. This is a very ingenious and clever arrangement, which I believe I am right in saying has not been put into practice in England on account of the excessive cost.

(*c*) *Schools.*

Where children are concerned it is most important that the ventilation should be perfect. In the case of schools a rare tussle has gone on between the exponents of mechanical and natural ventilation, but I hold that where natural ventilation has failed, it was because the outlets had been insufficient and ill-arranged. The air should be changed at least three times an hour, and the outlets should be properly

calculated to effect this. In the old days, schools were the most glaring cases of bad ventilation, but now, under the London School Board, the Education Department, and other Authorities, all this is changed. The minimum floor space and cubic space per pupil are settled, the form and shape of windows are defined, but what I should like to see is a definite proportion of outlet ventilation required for each pupil; this should be between four and five square inches. At school, I feel sure, we most of us noticed the cold draughts which used to descend on our heads. This, I believe, is due to a great extent to the provision of ventilators about 6 ft. above the floor level. I always maintain that the best place for inlet ventilators is at or near the floor level.

(*d*) *Churches.*

It has always struck me that the ventilation of churches, judging by the results I know of, is little understood. I may be wrong—I hope I am, and that I shall learn better to-night—but it has always been my fate to visit churches which were the most draughty places possible. My own view is that in designing the ventilation and warming of a church, the excessive amount of window space and cold stone is not properly taken into account. The substitution of radiators, recessed into the walls, for the open grating over a channel containing hot-water pipes running down the aisles, I look upon as the first change necessary, because there is a great deal of difference between a church and a greenhouse.

The exhaust ventilation, which should be well distributed, should be led by trunks into central ventilating flèches constructed on proper scientific principles. Efficient exits should be provided for the foul air which accumulates in the open roofs of churches, so that it does not again descend on the heads of the congregation. The exhaust ventilation should be so controlled that it is working at its utmost during the evening service *only*, when the gas adds greatly to the amount of foul air generated in the building.

The architect who designs churches should remember that efficient ventilation and warming, which conduce to the comfort of the worshippers, are as important as the external and internal beauty of the church, a thing I fear that their artistic capabilities lead them to prefer to the mere scientific and somewhat prosaic nature of the subject of my paper this evening.

(*e*) *Theatres and Public-halls.*

At first sight it appears a somewhat rapid change from church to theatre, but though their objects are so different they have much in common, in that we have to deal in both cases with the assemblage of a large number of persons under the same roof for short periods only. In this case, however, we have to comply with the regulations of the London County Council.

Firstly, with regard to the *warming.*

No fireplaces are allowed in any portion of the auditorium or stage. The warming in these places must be by hot air, or on the low-pressure hot-water circulation system (the high-pressure system with sealed pipes being inadmissible), and all the pipes must be of galvanised wrought iron. All pipes and radiators must be recessed where necessary in the walls, so as not to diminish the width of the gangways. On this point I would say that the recessing of this warming apparatus is very desirable, and can, by means of ornamental grilles, be made a part of the internal decoration of the theatre. The heating apparatus must be enclosed on all sides by brick walls at least 9 in. thick, and special attention given to the ventilation thereof.

With regard to the ventilation, one is left more freedom, subject to the approval of the Council. A theatre, being a building where windows are almost an impossibility, lends itself naturally and scientifically to systems of mechanical ventilation. I have no hesitation in preferring the plenum system.

You will pardon me, I feel sure, if I refer to one of my own buildings which, though not exactly a theatre, is to be used as an entertainment hall. I refer to the new first class swimming bath about to be erected for the St. Pancras Vestry at Kentish Town, which, during the winter months, will be used as a public hall, and will be warmed and ventilated on the plenum system. The cold air will enter in the basement and be driven by powerful fans through steam cockles and through filtering and moistening apparatus and drawn through ducts placed beneath the floor of the dressing boxes or gangways of the bath. These ducts will be large enough for men to walk through. The fans will be driven by powerful electric motors. The warmed air will enter the bath through a large number of openings each about 12 in. square, placed under the seat of each dressing-box close to the floor level. The outlets will be at the ceiling level, and thence through the roof, which will terminate at each end with fixed deal louvres.

The chief difficulty in the case of a bath is the condensation on the glass in the roof. In the case under consideration, a separate supplementary plenum is so arranged as to discharge, from openings in the lower curves of the roof, warm air which, rising to the upper curves, where the glass is placed, will entirely prevent this condensation. I may mention that the fans to be used are those manufactured by Messrs. Davidson & Co., Limited, Belfast, whose fans, are, I believe, the very best on the market. They are now being used to ventilate the Law Courts of London—one of the most sadly ventilated buildings I know of, and are expected to remedy the present defects.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS.

THE fifth visit of the Session took place on Saturday, April 7, to Lord Windsor's House at the corner of Park-street and Mount-street: (Mr. F. B. Wade, architect).

Present-day planning for a modern London house generally suggests the problem of crowding as much accommodation as possible on a limited site. In the instance of Lord Windsor's house, however, Mr. Wade has produced a monumental type of gentleman's residence, palatial both with regard to the spacing of the apartments and the decorative treatment of the greater part of the interior.

The hall occupies the main portion of the ground floor, and is approached directly from the main entrance by a wide range of marble steps. An arcade on each side supports a vaulted ceiling which is left for future colour decoration. There is a breadth of treatment in the design of the hall, carried out entirely of marble, which immediately denotes a sense of dignity and luxury. There is no feeling of limited area, but a noticeable disregard for any usual methods of spacing a ground floor. The marble lining to the walls is from Lord Windsor's quarries at Penarth.

The morning room, on the west side of the hall, is panelled entirely with cedar wood; the panelling is elaborately moulded with a suggestion of French feeling in the design. In direct communication with the morning room is the "own room." In it we find panelling of Italian walnut. The change between the two woods of these respective rooms is very marked; but though at times seen in conjunction with one another, in spite of the decided change of the colouring, there is a neutral blending of the two materials.

The dining room is still unfinished, but we understand oak will be the chief material employed in the design.

From the centre of the hall on the north side the grand staircase approaches the salon on the first floor. This extends over the hall and entrance, and is undoubtedly the most striking feature of the building. Clustered Chippolina columns, with carved Sicilian caps, support a modelled vaulted ceiling. The walls are designed in a series of marble panels in which Verd Antico and Breccia predominate. In pleasing contrast with the subdued tone of the lower staircase walls there is a Burne Jones cartoon framed into the wall of the landing. This gives a decorative effect to the large expanse of blank wall, and is in every way a notable addition.

It must be admitted that the decoration of the boudoir is not so successful as that of the other parts of the building. The heavy characteristics of the mouldings are still further brought into prominence by a vivid green and gold treatment. The work to this apartment is, however, still unfinished; perhaps the ultimate colouring of the walls will to a certain extent justify the present scheme.

On the second and third floors, reached from the side staircase only, are wide corridors extending the whole length of the house. The sides of these corridors are arranged in a series of panelled wardrobes, effectively designed and lined with cedar wood. The woodwork generally is stained green. The offices in the basement have been perfectly studied. The kitchen, which is under the flat at the side of the house, is amply lit from the sides; the usual type of toplight is absent. A great part of the basement walls is lined with Dutch tiles with a green tile skirting and wood capping on the tiles about 7 ft. above the floor. Generally, the kitchen offices are well appointed and the fittings are admirably adapted to their several uses.

At the conclusion of the visit the President, Mr. Prynne, proposed a vote of thanks to Lord Windsor for allowing the members access to the house (which is now occupied), and to Mr. Wade for kindly arranging the visit and personally attending to give any descriptions and explanations of the design which might be considered desirable. Mr. Cornish, the late clerk of works, was also present and assisted with useful particulars with regard to the construction of the building.

NATIONAL ASSOCIATION OF MASTER PLASTERERS:

FIRST ANNUAL MEETING IN LONDON.

THE first annual meeting of this Association was held at the St. Martin's Town Hall, Charing Cross, W., on Wednesday. Mr. J. W. Sugden (President) occupied the chair, and a large number of members from London and the provinces were in attendance.

Annual Report.—The Secretary (Mr. Geo. Soall) presented the first annual report, in which the executive congratulated the members on the continued prosperity of the trade generally. The Association, which was the outcome of the lock-out of the operatives in March, 1899, was, the executive thought, an auspicious event, and this annual meeting was probably the first occasion upon which a representative body of master plasterers from all parts of the kingdom had assembled together. A need for the Association existed, so that matters connected with the trade should be dealt with by themselves, and a strongly federated union of masters should get control of their trade and get the same properly recognised by architects, builders, and the operatives. No master plasterers were elected on the standing committee of the National Association of Master Builders (who dealt with the lock-out), but their efforts were rewarded by the National Association of Master Builders allowing them to elect three of their members to sit on the Conciliation board. Since the formation of the Association they had held meetings in the following centres, viz.:—Sheffield, Derby, Leicester, Manchester, Leeds, Nottingham, Huddersfield, Birmingham, Bradford, and Newcastle-on-Tyne. The report continued:—

"Many notices for an advance of wages and alterations of working rules have been received, some of which have been amicably settled while others are still in abeyance. Cordial relations between employers and operatives exist in the majority of towns where branches of our Association are established. At Nottingham a dispute is still in existence, owing to the action of the master builders of that city engaging bricklayers to do the work of plasterers. A deputation from this Association waited upon the Midland Centre of the National Building Trades Employers' Federation with a view of obtaining the assistance of that Association in bringing this dispute to an end, and it was agreed by their members to endeavour to arrange a meeting of the two sections of operatives, together with an equal number of master builders and master plasterers, but up to the present the operative bricklayers have refused to join in the arrangement, which still stands in abeyance. The result is very disastrous to the master plasterers of that district, as the bricklayers will not allow Union plasterers to work on Federated Master Builders' jobs, and will not work with non-union men, and they have the support of the Federated Master Builders in the action they have taken . . . . At the half-yearly meeting held at Birmingham on October 17 a deputation from the Scottish Master Plasterers' Association was introduced. The secretary having read a draft agreement as a basis of a proposed affiliation of the two associations, the various members of the deputation then expressed their views on the subject, and promised that the same should receive the careful consideration of their members, and, personally, they thought the time had arrived when an understanding should be arrived at between the members of both associations, for their mutual benefit. On the question of affiliation with the National Association of Master Builders, it was agreed that the terms then read should be forwarded to the National Association of Master Builders as a basis on which we were prepared to affiliate with them. This question

was brought before the annual meeting of the National Association of Master Builders which was held in London on January 30, when it was decided that our application be laid on the table . . .

Your executive further wish to call the attention of the trade to this movement, which has for its object the adoption of a common policy in regard to questions that may from time to time be raised affecting the trade.

To accomplish the objects of this Association, the necessity for generous and ungrudging financial support must be emphasised. The apprenticeship question is one that deserves the serious attention of the members, who should in all cases employ as many apprentices as the agreement permits, viz.: one to every four operatives, so as to remove the present intolerable scarcity of labour; and, further, that all apprentices should be bound . . ."

The Chairman, commenting upon the report, said he had to thank the members for the substantial support they had accorded him—support both moral and financial. From what had already transpired it was clear that the Association would be of great use, not only in the every day life of their trade, but in emergencies such as they had already experienced. The Association had undoubtedly justified its existence, but there was yet a great deal of work to be done.

Mr. Wheater (Leeds), as one of the auditors, informed the meeting that the accounts were in excellent order. Necessarily their first year was the most expensive. Speaking of the success of the Association, he assured them that those in their trade in Leeds had already derived great benefit from their union in the matter of contracts alone. He threw out as a suggestion worth considering that the number of the executive should be decreased. Mr. Jones (Liverpool) having spoken in terms of approval of the report, the latter was adopted.

On coming to the election of President for the ensuing year, Mr. W. Smithies (Charles Smithies & Son, Birmingham) was unanimously chosen, while Mr. A. Wheater (Leeds) was voted to the vice-presidency. The auditors were Messrs. J. Mallin (West Bromwich) and H. Hodkin (Sheffield). Mr. Rimington moved a vote of thanks to the retiring President, and the latter, in returning thanks, said there was every desire that the Association should become strong. It was an important point with him that the Master Plasterers should have control of their own affairs. He felt that in the past they had not been justly treated, but now that they had been brought together he found a very strong brotherly spirit prevailed.

It was agreed that in future the headquarters of the Association should be at Birmingham.

The Secretary submitted the draft of an agreement with the Scottish Master Plasterers' Association. The Chairman explained that the only difference between them and their Scottish friends was the penalty to be inflicted for breach of agreement.—Mr. Davidson moved that the draft agreement submitted by the Scottish Association be accepted.—This was seconded by Mr. Wright (London) and carried unanimously.—It was resolved, after a vote, to hold the next half-yearly meeting at Liverpool.

In the evening the members dined together at the Holborn Restaurant. The chair was occupied by Mr. W. Smithers (Birmingham), the newly-elected President, who was supported by Messrs. J. W. Sugden, the retiring President, B. Thorp (Bradford), W. H. Horne (Idle, Yorkshire), A. Wheater (Calverley, Yorks), J. Bassett (Bassett's Adamant, Birmingham), J. Mallin (West Bromwich), W. Jones (Sheffield), T. Rimmington (Leicester), R. Simpson (Nottingham), A. Mountain (Leeds), S. Wright (Hackney), H. Summers (Harlesden), G. Kenway, C. Chissell, J. Annan (London), J. Rule (Sunderland), J. Lindsley (Barnsley), F. S. Ross (Rochdale), John Davison, T. Thomas (Birmingham), J. Dewhurst (Blackpool), T. Odams (Derby), W. E. Jowett (Huddersfield), J. Walsh (Leeds), T. Jones (Liverpool), T. Day (Nottingham), J. Brailsford, J. L. Harrison, J. Warring, J. Tennison, F. Leadbetter, T. Hall (Sheffield), and Geo. Stoney (Leicester), and others.

After the loyal toasts, "The Army, Navy, and Auxiliary Forces," given by the Chairman, was acknowledged by Mr. J. W. Sugden, who proposed the toast of the evening, "The National Association of Master Plasterers." He reiterated his belief that a great future was before the Association.

The Chairman was the first to respond, and he took occasion to thank the Association for conferring upon him the honour of the presidency.

Mr. Soall, the Secretary, also responded, and mentioned that the membership now totalled over 300.

Mr. Rimmington proposed "The Craft of Plastering," and advised members to take great pains in educating their apprentices. With regard to their practical interests, he urged that they should make it impossible for builders to take away distinctiveness of their craft by entrusting the work to bricklayers or any other operative class.

Mr. S. Wright (London), who responded, reminded them that plastering was an ancient and honourable craft, originating, no doubt, at the dawn of civilisation. Coming down to the Syrian times, they saw how, even in those early times, the craft had so developed that the Syrians began to record events on their plaster work. The Egyptians, too, did the same, and went further, by indulging in sculpture on the plaster of their walls. Indeed, it was only by the remains of work such as this that we had any reliable record of the history of early peoples. Coming to still more recent times—during reigns of our Henries and Edwards—they saw how plasterers became possessed of rights and privileges, which he feared they had now lost.

Mr. A. Wheater, Leeds, who also responded, said he was very much afraid that master plasterers allowed themselves to be treated with too little respect by allied trades. Their aim should be to stand together, and not to under-cut one another, to the disadvantage of themselves and to the advantage of certain branches of the building trades. He had the satisfaction of knowing that fewer failures and bankruptcies were recorded among plasterers than among any other trade in the country. That was something to be proud of.

"Kindred Associations" was given by Mr. Lindley, and acknowledged by Mr. B. Thorp, Bradford. "The Visitors," "The Committee," and "The Chairman" concluded the toast list.

BUILDERS' ACCIDENT INSURANCE, LIMITED.

THE nineteenth annual general meeting of this company was held at the registered offices, 31 and 32, Bedford-street, Strand, on Thursday the 5th inst., Mr. Stanley G. Bird presiding.

The notice convening the meeting having been taken as read, and the minutes of the previous meeting read and confirmed, the Secretary, Mr. R. S. Henshaw, read the following report:—

"1. The directors have the pleasure to present their report and the accounts for the year ending December 31, 1899.

2. During the period under review, the company has received notice of 2,159 accidents.

3. The directors, in view of the present uncertainty as to the risks which are thrown upon the members of the company by the Act, as interpreted by the Court of Appeal, and of the advice of their responsible officials, do not consider it expedient to reduce the normal rate of premium below 15s. per cent., which was the rate fixed when the Act came into operation. They feel, however, that all those holding policies on December 31, 1899, are entitled to some rebate on renewal; and, continuing the policy which they initiated last year, the directors propose to allow to old policy-holders a rebate average about 15 per cent. The continuing members of the mutual society will therefore reap some advantage, and it is hoped that new members will, by effecting an insurance at once, become entitled at the end of the current financial year, as old insurers, to a substantial rebate, when the result of the year's working has been ascertained and their policies are renewed.

4. The remuneration of the directors for the period will, in accordance with the Articles of Association, be left to the members at the general meeting.

5. In accordance with the Articles of Association, the following directors retire and are eligible for re-election, namely:—Messrs. H. H. Bartlett, Stanley G. Bird, John Mowlem Burt, Frederick J. Dove, and Thomas F. Rider."

Appended to the report was the statement of accounts for the year ending December 31, 1899.

The Chairman, in moving the adoption of the report, and the revenue account and balance-sheet of the company, said he had to congratulate them on the successful ending of the year. The accounts were made up for the year, whereas the former accounts were only made up to December, 1898, for seven months, and therefore they were not very well comparable; but it would be noticed that the premiums showed an increase of 3,166*l.*, and the claims amounted to 23,150*l.*, as compared with 10,081*l.* for the seven months; therefore they would see that there was a slight increase in the percentage of claims paid. The percentage of claims to premium income was about 67¾ per cent., and the expenses of management and rebate came to about 17¼ per cent., so that it showed that the claims paid, and the expenses of carrying on the business, came to about 79 per cent. of the amount of the premiums. The expenses of working the company were very low indeed—11½ per cent. The usual percentage of other companies varied from 25 per cent. upwards, but this company was carried on as a mutual company and for the benefit of the trade generally, and the expenses were not very heavy. They might think, probably, that the amount of the premium charged was high, and that possibly it ought to be reduced so as to bring the Builders' Accident Insurance somewhat into competition with other offices which are charging very much less; but it was not the policy of the company to enter into competition with any company; certainly not with a company that had a large share capital or other business, out of which they could pay their losses. If the Builders' Accident Insurance had losses to pay at all, they had to pay them out of their own pockets, and it was not fair that they should cut down their premium. They ought to carry on the business fairly and honourably towards one another, and to assist the trade generally. Although, indeed, they were paying a little more premium just at the present time, it was really an insurance against having to pay a higher rate of premium at some other time, because all respectable offices—or (he would not say respectable offices), some of the old-established offices—were charging a very much higher rate than the Builders' Accident Insurance, and they continued to charge it, and they would not abate their charges. Therefore that rather confirmed the Builders' Accident in the step they had taken, and what they proposed to do was to keep the rate of premium up to what it is at the present time. If the offices which were quoting lower rates could continue to do so for a year or two, and they thought they could get rid of the Builders' Accident and one or two other offices which were charging a fair rate, that was their object, and if they were successful in doing so it might be depended upon that they would put up their rates quite as high as other offices and a great deal higher. Therefore it was a great deal better to go on paying a higher rate than to have to pay any sum that the other offices might ask at some other time. He did not think they were justified in offering any higher rebate than the 15 per cent. They had only had eighteen months' experience, and that was not long enough to justify them in proposing a reduction in the rates at present.

Mr. Burnell seconded the adoption of the report. The amount of increase of business showed the energy that had been put forth by the directors to enlarge the area of the Society, and it was certainly very satisfactory to see that there was such an increase on the twelve months' working over and above what it was last year.

The motion having been carried unanimously, the five directors who had gone out of office were re-elected.

Mr. Burnell suggested that in future the number of attendances and the number of meetings should be stated. He moved that the remuneration of the directors be the same as last year.

The motion having been seconded was carried unanimously. Mr. Henshaw stated that there had been thirty-three meetings during the year.

It was resolved, "That Mr. Charles Fox, F.C.A., be re-elected auditor to the Company."

Mr. James Hill moved a vote of thanks to the Chairman, to all the directors for their services during the past year, and to the Secretary, Mr. Henshaw.

The motion having been seconded, was carried unanimously, and, the Chairman having replied, the meeting terminated.

HOTEL, GLENFARG, PERTH.—A new hotel is being built at Glenfarg, adjoining the station. The site fronts the Great North-road and the road to Damhead. Mr. David Smart, of Perth, is the architect, and the following are the contractors:—Mason, Mr. William Deas, Glenfarg; joiner, Mr. Alexander Deas, Glenfarg; slater, Mr. James Buchan, Perth; plumber, Mr. James MacLeish, Perth; and plasterer, Mr. A. E. Hutcheson, Kinross.

ARCHITECTURAL SOCIETIES.

BRISTOL SOCIETY OF ARCHITECTS. — The annual general meeting was held at the Fine Arts Academy, Queen's-road, on Monday, the 9th inst., Mr. W. L. Bernard presiding. The report for the session was presented to the meeting and adopted. A satisfactory increase in membership has taken place during the past year, and various papers on artistic and technical subjects have been read at the monthly meetings. The by-laws have also been entirely revised, and, after approval and confirmation by the Royal Institute, will be in force next session. The balance-sheet showed that the funds of the Society are in a satisfactory condition, and the auditors (Messrs. Nicholson & Weston) were re-elected. It was decided to make an annual grant to the Architects' Benevolent Society, and to discharge the liabilities of the Book Club. The voting for officers resulted in Mr. Frank Wills being elected President, Mr. G. H. Oatley and Mr. Joseph Wood (re-elected) vice-presidents; and the honorary secretary and treasurer (Mr. H. Dare Bryan) was again unanimously re-elected. Mr. Frank Wills, in succeeding Mr. Bernard in the presidential chair, alluded to the years of valuable work that the retiring President had devoted, not only to the interests of the Society, but to all matters affecting the well-being of the profession in the district. A hearty vote of thanks to the late President was formally moved by Mr. Joseph Wood, seconded by Mr. Harold Smith, and carried with acclamation; and, upon the proposition of Mr. M. A. Green (Bath), seconded by Mr. G. H. Oatley, a similar vote of thanks was passed to the honorary secretary for his labours on the Society's behalf. This was supported by the President, and carried with acclamation; and the proceedings then terminated.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—On the 10th inst., the annual meeting of the Sheffield Society of Architects and Surveyors was held at the School of Art. The President, Mr. J. Smith, presided. The Hon. Secretary, Mr. W. C. Fenton, read the thirteenth annual report of the Council, which stated that the membership during the past year had been increased in numbers, but owing to several deaths and removals, the present net total—110—was four less than at the corresponding period of last year. After a reference to the meetings held during the year, the Council dwelt on the correspondence between the Society and the Master Builders' Association on the question of an open arbitration clause. At present no definite decision had been arrived at. A lengthy reference was made to correspondence with the Town Clerk of Sheffield on the subject of the Corporation Bill. The Council stated that a letter had been received, dated the 6th inst., from the Town Clerk, and that most of the Society's suggestions had been adopted. Those remaining unaltered, while not quite satisfactory, were safeguarded by the right of appeal. Broadly, the Society's views had been generally met by the City Council, and the result should prove satisfactory, not only to the profession and their clients, but to the public generally. The Council had had before them a letter from the Nottingham Architectural Society with regard to the question of architectural work carried out by that Corporation, which was causing considerable dissatisfaction to the profession in that town. The Council approved of a reply in sympathy with their complaints, and asking for further information as to any action which the Nottingham Society might take in the matter.—The Council had also had before them the same question in relation to Corporation work in Sheffield, but had not, as yet, been able to take any definite steps in the matter. The Council had had before them the question of a competition for two new churches in the city, and the Archdeacon of Sheffield was addressed, calling attention to the lack of proper conditions; the absence of a professional assessor; no plan of the land or indicated levels and the non-provision of any premiums. The statement of accounts showed—with a balance in hand last year of 124*l.* 3s. 9d.—the total receipts to be 213*l.* 5s. 7d., and the year closed with a balance in hand of 127*l.* 6s. 1d.—The President, in proposing the adoption of the report, said the suggestions made by the Council of the Society to the Parliamentary Committee of the Corporation with regard to the Corporation Bill, had for their object not the diminution but rather the increase of public advantage, with the least possible hardship and inconvenience to building owners, and were also made in order to facilitate the working together of the architects and the Corporation officials.—Mr. C. Hadfield seconded the adoption of the report, and the motion was agreed to. A vote of thanks having been passed to the officers for their services during the past year, the following were elected for the ensuing twelve months:—Mr. J. Smith (President), Mr. P. Marshall (Vice-President), Mr. F. Fowler (treasurer), Mr. Fenton (hon. secretary). Council: Messrs. R. W. Fowler, C. Hadfield, C. J. Innocent, E. M. Gibbs, J. R. Wigfull, J. B. Mitchell-Withers, and T. Winder.

EDINBURGH ARCHITECTURAL SOCIETY.—A meeting of the Edinburgh Architectural Society was held on the 11th inst. in Dowell's Rooms, George-street, when the Honorary President, Mr. R. D. Lorimer, gave an address and presented the prizes for the competitions as follows:—Honorary President's Prize of 10*l.*, Mr. Bailey S. Murphy; President's Prize of 3*l.* 3s., 1. Mr. W. S. A. Gordon; 2. (Prize of 2*l.* 2s., presented by Mr. Robert Wilson) Mr. W. H. Johnson; Vice-President's Prize of 2*l.* 2s., Mr. And. Muir.

Illustrations.

ILLUSTRATIONS OF FRENCH GOTHIC SCULPTURE.

THE whole of our illustration plates are occupied this week with examples of French mediæval sculpture, which are given in connexion with a lecture on the subject by Professor Baldwin Brown, recently read before the Edinburgh Architectural Society, and which is printed in full in this number. Having intimated to Professor Baldwin Brown that we should be glad to publish his paper, he sent with it a collection of photographs of the sculptures chiefly referred to, and we thought we could not do better than take the opportunity of giving some collective illustrations of a mediæval art which is of such great interest, and which has been a good deal discussed of late, in Mr. Prior's recent work and elsewhere.

All the illustrations are commented on in Professor Brown's lecture, to which we may therefore refer the reader.

All the illustrations of Reims are from photographs by M. Trompette, of that city. In the other cases we are not able to give the names of the photographers.

Books.

The Works in Architecture of Robert and James Adam. Reproduced, with English and French Text. Part I. Dourdan (Seine-et-Oise), France; E. Thézard *fils.* 1900.

THIS is the first portion of a reprint of the great work of Robert and James Adam, copies of which are now hardly to be found except in libraries. It is reproduced, as indicated above, by a French publisher and with French and English text; we presume, therefore, that it is expected that there would be some demand for it among French architects. Possibly its publication in France may lead to an Adam fashion there also, if it be properly brought to the notice of French architects, and if they are led to understand (for that is the important point) that this is a publication which represents the work of architects who made the English style for their own generation, and whose work has been the object of a "revival" in England. As far as this country is concerned, the publication perhaps comes a little late, for fashions in architecture change so fast here that it is likely enough that the taste for imitating the form of Classic architecture developed by the Adams is just about to give place to some other cult. But the book at any rate is a celebrated one, and those who have not a copy of the original for their library may be glad to have the reprint.

The plates have, we presume, been reproduced by photography; they have very much the look of the originals, and both engravings and text are reproduced on the large and sumptuous scale of the original, with its fine type and wide margins. A special type has been cast for the letterpress. The reproductions of the engravings are admirable; and in fact, except from the book-collector's point of view, the possession of this new edition of Adam's work will be equivalent to the possession of the original.

The issue will be completed in ten parts, of which the one before us is the first, at a cost of 21s. each part.

The Cathedral Church of Carlisle. By C. KING ELEY. Geo. Bell & Sons. 1900.

THIS is a further addition to the "Cathedral Series" already brought out by Messrs. Bell & Sons and is similarly arranged, the letterpress dealing in five chapters with the points of interest in its history, the exterior and interior of the fabric, the history of the See, and an account of the castle. It is profusely illustrated by reproductions of photographs and a number of plates from Billing's well-known work on the cathedral. Carlisle is one of our smaller and less interesting cathedrals, but its Early English and Decorated choir will always give it a foremost place for beautiful design, and there is considerable interest in the Norman work of the "crossing" and the fragments of the monastic buildings of the Augustinian house of which the church formed part. The way the choir is joined to the earlier work must always be considered as one of the least successful solutions of the many problems that faced the mediæval architect, but of the beauty of the addition itself there can be no question. The ground plan given at the end of the book is poor; it occupies a page, and is sufficiently large for the windows and various dates to have been shown. Like the plans of some of the other books in this series, it is the one blot in a very careful and concise guide.

Notes on Instruments best suited for Engineering Fieldwork in India and the Colonies. By W. G. BLIGH, M.Inst.C.E. London: E. & F. N. Spon, Limited. 1899.

THIS book is neither a descriptive treatise on surveying instruments generally, nor a text-book on surveying, but is exactly what one might reasonably expect after reading the title. Mr. Bligh has had some considerable experience of engineering fieldwork as an executive officer of the Public Works Department in India, and he is, therefore, perfectly aware of the difficulties which have to be encountered in Indian and colonial surveys. More than this, he knows exactly what instruments are most suitable for such work, and how far the instruments, made for surveys in England, fall short of the standard necessary elsewhere. In a country like England, whose area is thoroughly well mapped, and where so many landmarks exist in the form of church towers and other prominent objects, the task of the surveyor is comparatively a simple one. On the other hand, in India and the colonies the survey of vast unmapped areas demands special instruments and special knowledge. Mr. Bligh is by no means the only engineer who has found the need for improvement in appliances intended for use abroad. A paper on the subject of "Railway Surveying in Tropical Forests," read by Mr. Shelford to the Institution of Civil Engineers, makes clear the difficulties encountered in lands where tracts of dense forest have to be penetrated, and rough country negotiated, sometimes with the aid of inaccurate maps, and at others without even these doubtful auxiliaries. Mr. Shelford, says, for instance, that "In the Honduras and all the African surveys the trade route, or path, was surveyed with a miner's dial, chain, and spirit level. . . . A theodolite survey of the road would be most laborious and liable to errors. . . . (He) has never found a prismatic compass satisfactory, in hot climates it becomes foul and slow in action, and it is apt occasionally to give a false reading."

Turning to the opinion of our author, we find he thinks that "Invention as regards above-ground surveying instruments has been absolutely at a standstill in fact for a long time, if the refinements of stadia measurements and theodolite levelling, which are mostly practised on the continent and in America, be excluded." Like Mr. Shelford, he is partial to the miner's dial, with regard to which he says, —"We find that invention has been by no means stationary, but that the original simple miner's dial has been again and again improved upon, till it has now been developed into an instrument which is eminently suited for above

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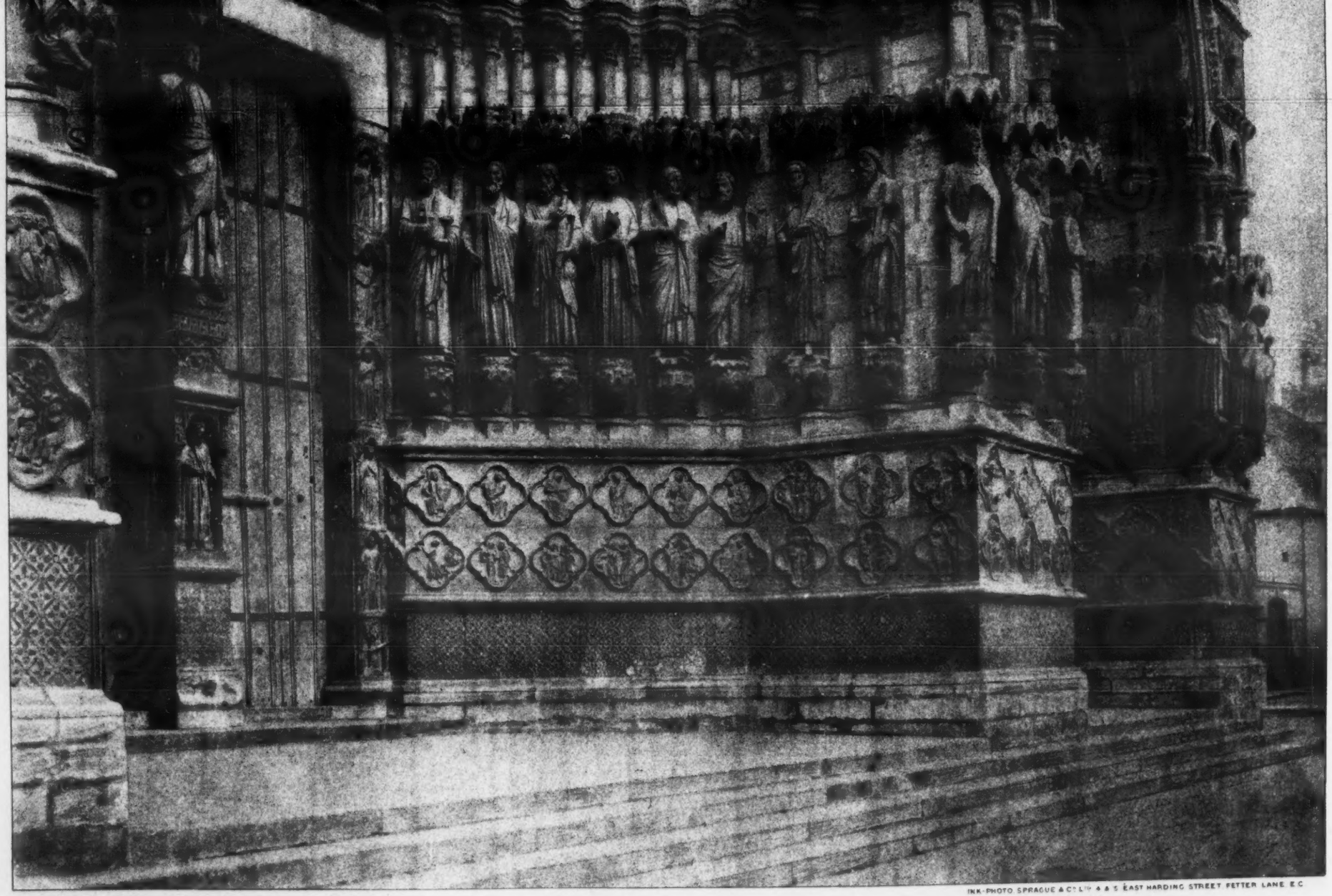

INK-PHOTO. SPRAGUE & Co. Ltd. 4 & 5 EAST HARDING STREET FETTER LANE E.C.

FRENCH GOTHIC SCULPTURE: The Central Porch, Amiens.

FROM A PHOTOGRAPH BY M. TROMPETTE REIMS.

MARY OF THE VISITATION.

FRENCH GOTHIC SCULPTURE: REIMS: WEST FRONT.

INK PHOTO SERAGUE & C° LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

FRENCH GOTHIC SCULPTURE. PORCH OF ST. TROPHIME, ARLES

FRENCH GOTHIC SCULPTURE. Porch of St. Trophime, Arles.

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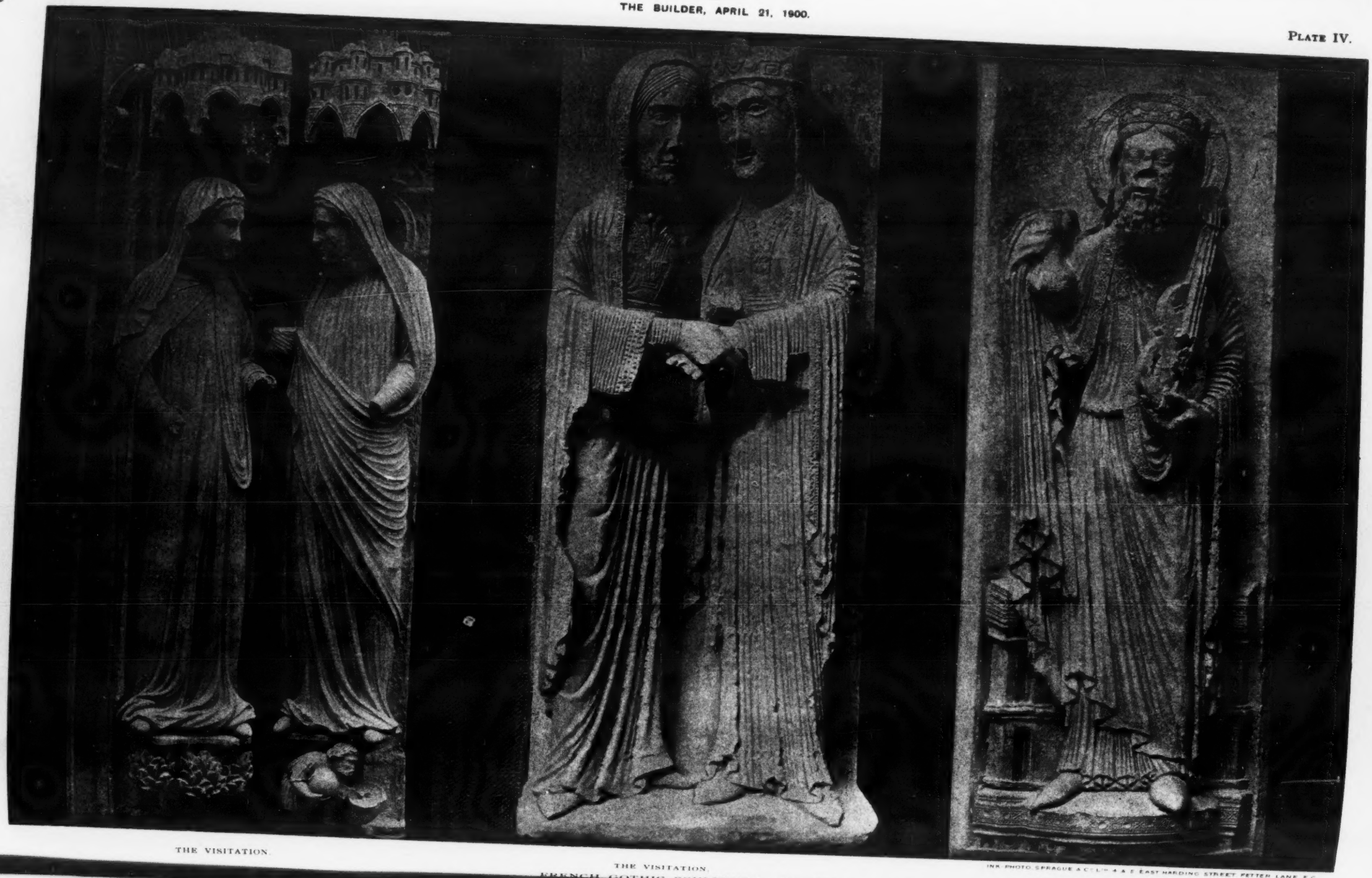
PLATE IV.



THE VISITATION.

THE VISITATION.

INR. PHOTO. SPRAGUE & Co. Ltd. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

AN ELDER OF THE APOCALYPSE.

PLATE V.

FRENCH GOTHIC SCULPTURE.

FROM A PHOTOGRAPH BY M. TROMPETTE, REIMS.

ANGEL ON PIER OF FLYING BUTTRESS.

INK-PHOTO SPRAGUE & C° LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

NORTH SIDE OF CENTRAL PORTAL.

FRENCH GOTHIC SCULPTURE: REIMS.

INK-PHOTO SPRAGUE & C° L^D 4 & 5 EAST HARDING STREET FETTER LANE E.C.

FRENCH GOTHIC SCULPTURE: WESTERN PORTALS, CHARTRES.

FROM A PHOTOGRAPH BY M. TROMPETTE, REIMS

CHRIST AS PILGRIM, AND DAVID.

FRENCH GOTHIC SCULPTURE: REIMS: WEST FRONT.

—as well as below—ground work. In an unmapped country the conditions closely approximate to those in a dark mine, or a ship at sea, consequently the magnetic needle must play an important part in any instrument suitably designed for colonial work."

If to this extract we add the information that Mr. Bligh is himself the inventor of several apparently excellent instruments, designed specially for Indian and colonial operations, the *motif* of his "Notes on Instruments" will be fairly evident. He does not, however, attempt to use existing instruments as a foil to augment the merits of his own, for he is ready to point out excellencies where they are to be found, even when suggesting improvements.

Commencing with instruments for horizontal angle surveying, the author mentions the fact that

"Preliminary surveys in India are generally carried out by sub-overseers, a low-paid class of native subordinates who could not be entrusted with so complicated an instrument as a theodolite. But they could easily be got to work vernier rack dials, which are very strongly built instruments, and superior in every way to the prismatic compass."

Unfortunately, the compass, which is so largely employed in India, cannot be read to less than a quarter of a degree, and it is doubtful whether it can be relied upon to more than about one-third of a degree. The author, therefore, advocates the adoption of some instrument intermediate in precision, between the prismatic compass, which reads degrees, and the theodolite, which reads to single minutes. An appliance said to fulfil this condition has been devised by Mr. Bligh. It is termed the "Combined Prismatic Dial and Clinometer," and the vernier gives readings to five minutes. The superiority of this modified compass is attributed to the increased interval between the sight vanes, to the introduction of a rocking centre, allowing inclined sights to be taken and inclination measured, and to the provision of bubble-levels. Several forms of miners' dials and theodolites are described and illustrated in the same chapter; the Hedley rack dial is recommended as an excellent surveying instrument for use by native surveyors, or generally as a very superior substitute for the ordinary prismatic compass.

A new instrument for angular measurement by direct means is known as Henderson's Rapid Traverser. This appliance is considered by Mr. Bligh as likely to supersede to some extent other angle-measuring instruments, owing to its accuracy and simplicity. It is found in practice to be especially applicable for town surveying and for the triangulation of distant or inaccessible objects. Col. Holland, late R.E., speaks well of the Henderson traverser, and says it eliminates three distinct sources of error—(1) inaccurate readings, (2) mistakes when entering angles in the field-book, and (3) mistakes in plotting. This instrument was originally intended for mining work, for which, the author remarks, it is clearly unsuitable, though constituting a valuable acquisition for operations above ground; he thinks its adoption has been considerably discouraged by the excessive price charged by the makers. Clinometrical instruments next receive attention, and after discussing the respective merits of appliances by various makers, chiefly those designed for mining and geological work, the author speaks of the primitive kind of road tracer used in Ceylon, and often made by native workmen. The instrument is much employed by planters, principally because no other equally simple road tracer is available. So that this reproach may no longer exist, Mr. Bligh has devised an instrument, which is now being made under the style of the Planter's Road Tracer. Reflecting levels of any kind are not thought to be suited for civil engineering, and the surveyor who wants a really good clinometer is invited to consider the points of another invention by the author. The apparatus in question is constructed so that the height of the line of sight may be adjusted to that of the staff by means of a sliding pillar working through the head of the tripod and between its telescopic legs. Mr. Bligh's level is said to be very rapid, sufficiently accurate, and to be particularly adapted for use by natives.

The Gravatt, or dumpy level, may be conveniently employed in England where instrument makers are always accessible for purposes of adjustment, but the original Y-form, or some improvement thereof, is much preferred abroad because testing and adjustment may easily be performed by the surveyor himself. There are already several comparatively new types of level, combining the form of the dumpy with the adjustability of the Y, and these are duly noticed by Mr. Bligh.

Short's Gradient Telemeter forms the subject of a somewhat lengthy description. This is a new instrument of ingenious design which has been highly spoken of by the Indian Government, the West Australian Government, and by the Cooper's Hill College. It is made in various forms available for taking levels and gradients, for measuring distances, and for setting out railway curves. Quite recently some modifications suggested by Mr. Bligh have been adopted by the makers, with the full approval of the inventor, and it is now believed that the Gradient Telemeter is one of the best all-round instruments for engineering operations, combining the functions of the level, the miner's dial, and the tacheometer, in addition to its own speciality of minimising labour in the field and in the office. A chapter is devoted to barometrical levelling, and the author describes the most suitable methods of curbing the vagaries of the aneroid barometer. He objects to the excessive range which is invariably adopted for instruments of this class, and aptly remarks, "It is not everyone who wants to ascertain the height of mountains 10,000 ft. high, or to descend into the bowels of the earth; and yet we find that no surveying aneroid is made with a less range than 6,000 ft." If these instruments were made with a range of, say, 3,000 ft., the cost would certainly be less and the gradations would be larger, and, therefore, more convenient. In India, the variation of the diurnal wave is fully 140 ft., and the use of twin barometers is almost indispensable, one being read by an observer at the survey camp and the other by the outdoor worker. If a self-recording barograph were available, one skilled operator would be released, and the records ought to be free from errors. The ordinary form of barograph made for meteorological purposes might be enlarged, so as to become suitable for the surveyor, but it would then be very expensive and enormously bulky. The author has devised an instrument which he hopes will meet this want. Briefly described, it consists of an ordinary aneroid barometer with a clockwork arrangement attached to the body of the case, and having a revolving chart which is marked by the indicating needle. The attachment runs on a roller-path encircling the dial, and it can be set to any desired part of the circle by means of a rack. Thus automatic records can be obtained within a sufficiently extended range for all ordinary purposes. In order to avoid interference, by reason of friction, with the free motion of the instrument, the needle is fitted so that the pricker only marks the chart at intervals; but an arrangement is also provided whereby a record may be obtained at any time by the pressing of a knob. Further, a striker is fitted for the purpose of shaking the mechanism, so that the needle may always read correctly. Tacheometry forms the subject of a separate chapter in the author's note-book. Tacheometers are, of course, well known to all surveyors, although they are comparatively little used in this country. Abroad they are largely employed, and are found to save an immense amount of labour, particularly in the case of a tract traverse on rough ground, with cross sections at intervals. The use of the tacheometer is by no means easy, and somewhat troublesome calculations are required to reduce inclined to horizontal distances in distance measuring and in levelling. Consequently, the author recommends as an alternate the adoption of Short's Gradient Telemeter in its latest form. Three brief chapters on road tracing, surveying by interpolation, and surveying in tropical forests, are interesting as indicating the conditions under which work has often to be performed abroad. Those who think of exercising their professional powers in Indian or Colonial spheres should derive benefit from a perusal of the author's experiences, and will probably wish more of them had been related, though they can scarcely be regarded as "notes on instruments." The volume would be improved by the addition of an index, and by further revision on the part of the author.

Traverse Tables for use in Mine Surveying. By WILLIAM LINTERN. London: Crosby Lockwood & Son. 1900.

THESE tables have been computed by the author with especial regard to the convenience of mine surveyors, but there is no reason why they should not be applied in other directions. The principles involved are the same as those in Hutton's "Mathematical Tables for Seamen," but in the present case determinations have been made to three minutes of the quadrant, and to ten different radii of hundreds, commencing with 100 and ending with 1,000. As constructed, the tables appear to be applicable to any basis of lineal measurement, providing the measure of the angle be taken according to the English system. Although aids of this class in no way dispense with the necessity for careful surveying, they may often be advantageously used as alternatives to ordinary methods of plotting.

Hydraulic Rams: their Principles and Construction. By J. WRIGHT CLARKE. London: B. T. Batsford. 1900.

IT is an undoubted fact that the hydraulic ram is a useful, and under favourable conditions an economical, appliance for raising water in moderate quantities. Success depends largely upon the correctness with which the ram and its auxiliaries are proportioned to the exact nature of the duty to be performed, and also upon the care taken with regard to practical details by the fitter. In his little handbook, addressed principally to plumbers, the author exhibits the same practical acquaintance with the subject which is evidenced by his previous writings on somewhat kindred matters. He is at his best when he relates facts and offers advice suggested by actual experience; he is at his worst when attempting to expound hydro-mechanical principles such as are involved in application of the hydraulic ram. As the preface correctly intimates, "no claim is made to literary merit, but the author hopes this may be found useful." If by "this," literary merit is to be understood, we are in entire accord with the sentiment expressed. We even go a step further, and venture to suggest that in succeeding editions, some attempt might usefuily be made in the direction of literary merit, so that the aspiring plumber who assails the stronghold of hydro-mechanics shall not have to encounter so much involved and parenthetical (not to say ungrammatical) phraseology. The following quotations will sufficiently illustrate our meaning:—

"It has been found in practice that where a service pipe from a cistern had an air pipe fixed below the stock-cock (*sic*), as at B, it has been found necessary to turn the end, out of which water spouted, over the top edge of the cistern, when a bibcock on the service pipe has been suddenly closed."

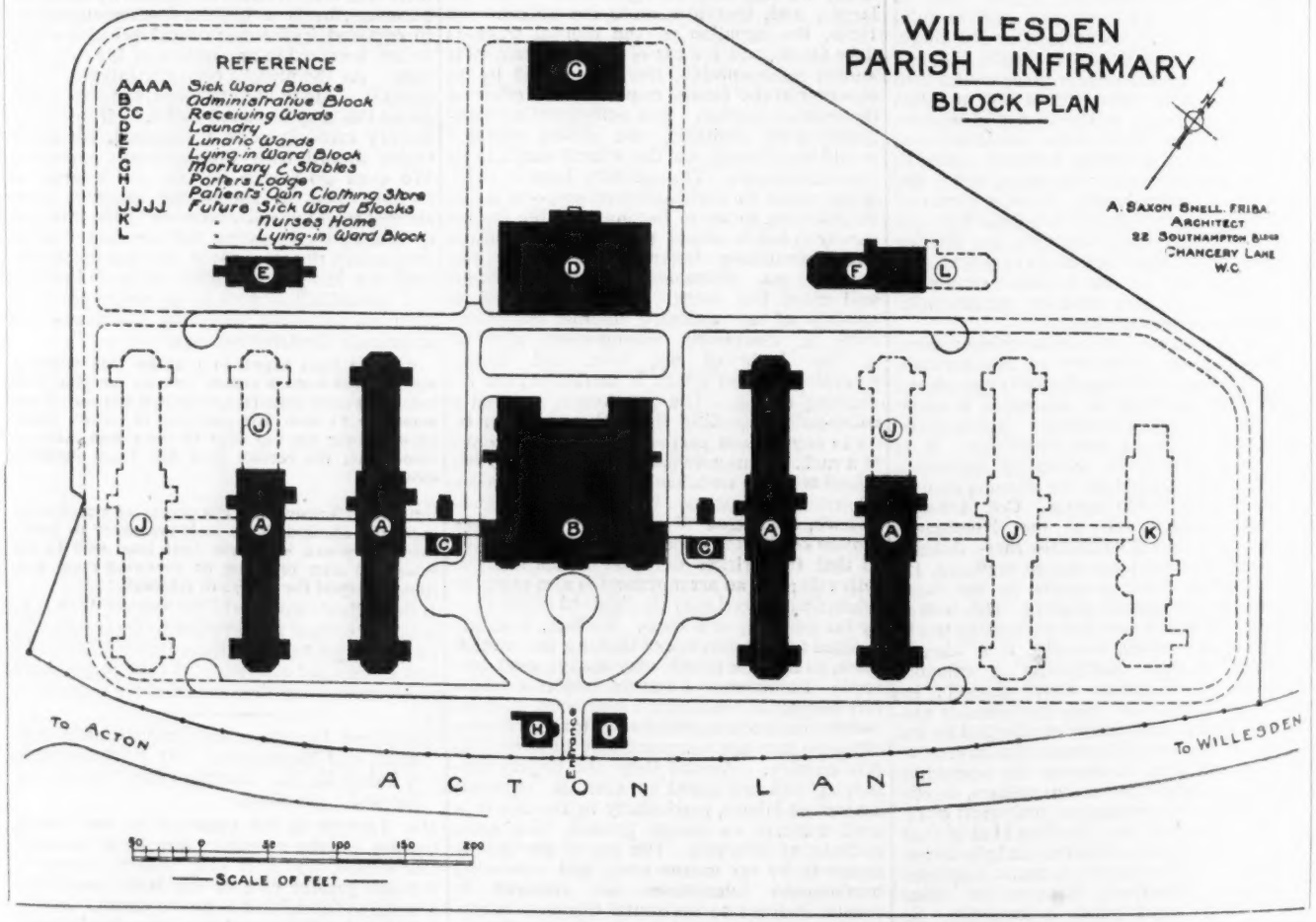
. . . .

"To still further show the power of water when suddenly checked it is only necessary to recall memories where lead-pipes have been split in the sides, and after repairing or renewing them, had again to repeat the repairs or renewals."

If the author's mastery of the English language is no better than that implied by these samples, he should get someone to go through his books and correct the sentences so that they should really mean what they are intended to mean.

The Steam Laundry: its Construction, Equipment, and Management. By JOHN TAYLOR, A.I.Mech.E., &c. London: Heywood & Co., Limited. (No date.)

MR. TAYLOR is the manager of one steam laundry and the managing director of three or four others, and it is only natural, therefore, that the greater part of his book should be devoted to the subject of management. Part I., on "Construction," occupies only about twelve pages; Part II., on "Equipment," runs to forty-three pages; and Part III., on "Management," to seventy-nine pages. The planning and construction of a laundry cannot, of course, properly be considered apart from the questions of equipment and management, but to the architect the book would have been more serviceable if some of the space which has been devoted to these questions had been given to Part I. The plan of a "model laundry to wash 100*l.* per week" is well arranged, and leads us to suggest that Mr. Taylor should, when a new edition is called for, include other typical plans, not omitting the laundries connected with public institutions such as hospitals and workhouses. Architects will not quarrel with Mr. Taylor about his remarks on construction, as in most cases he insists on the best of both materials and workmanship, although some may be disposed to think that large inspection chambers for drains need not be quite so close as he suggests—namely, not



more than 20 ft. apart. Part II. treats of boilers of different kinds, engines, and machinery, and is amply illustrated. The book cannot fail to be of service to laundry proprietors, for whom it is chiefly intended, and architects will find in it many valuable hints.

Notes on Boiler Testing. By FREDERICK GROVER, M.I.M.E., A.M.I.C.E., Manchester: The Technical Publishing Company, Limited. 1900.

THIS booklet of forty-four pages contains instructions on the testing of boilers with regard to their efficiency as steam-producers. It does not deal with structural defects, and the title is therefore to some extent misleading. Practical hints are given on stoking, fuels, air-supply, &c., and a typical boiler trial is described in detail, including the necessary apparatus, calculations, and form of report. The "notes" cannot fail to be of service, but it is a pity that the calculations were not more carefully checked. On page 38, the "evaporation from and at 212 deg. per pound of dry coal" is calculated to be 10·06 lbs., and this figure is given in the report, but on page 40 the calculation of boiler-efficiency is based on an evaporation of 10·33 lbs. of water. The heat-units on pp. 38 and 40 are also contradictory, and in two places (on pp. 38 and 41) decimal points are wrongly inserted. These are details, but they detract somewhat from the value of an otherwise excellent little pamphlet.

The Mercantile Year Book, 1900. Edited by WALLER LINDLEY JONES (*Mercantile Guardian* Office).

THIS book contains a directory of the principal exporters of various classes of goods from London, and the foreign ports with which they principally deal. Those who have building materials, &c., to export will probably find it useful for reference.

NEW INFIRMARY, WILLESDEN.

THE foundation stone of the new Infirmary Acton-lane, Willesden, was laid on the 10th inst. The accompanying block plan and bird's-eye view show the general disposition of the buildings, which will be erected on the south-west portion of the site acquired by the Guardians for the workhouse and infirmary. The site is as nearly as possible flat, falling very slightly towards the south-east.

The buildings, when completed for 616 patients (the present buildings will provide accommodation for 400, viz., 150 sick and 230 infirm), will consist of six double ward blocks (A A A), each two stories high, and each with accommodation for 100 beds. The administrative block (B) is placed in the centre of the buildings, with communication by a covered corridor with the ward blocks. On either side of the administrative block are two receiving wards (C C) for male and female patients, and immediately in the rear two small observation wards. Behind the administrative building is a large block (D) to contain the laundry, boiler house, &c., and in the rear of the male blocks is

a small building (E) for short period lunatics. In the rear of the female blocks is a ward for lying-in cases (F). Behind the laundry block, and removed some distance from it, are the stables and mortuary (G). The entrance gates to the buildings are flanked by two small blocks (H and I) respectively for porter's lodge and patients' clothing store and disinfecting apparatus. The buildings marked in dotted lines and lettered J.J. show future extensions to bring the accommodation up to the total of 616 beds. Block K will eventually be a separate nurses' home. Block L shows the extensions of the lying-in wards.

Each double ward block contains on each of the two floors two large general wards to hold twenty-two beds each. At the end of each ward is a large, well-lighted, and cheerful day-room. On either side of each end of the block are towers which will be fitted with baths, sinks, and conveniences. The centre part of the block is divided, on the ground floor, by the corridor, and on the upper floor by a conservatory, which effectually cut off one set of wards from the other. Two ward kitchens are provided on each floor, and two separation wards (one with separate bath and conveniences). These ward blocks will hold only sick patient; but it is intended, for the present, to devote part of them to old and infirm workhouse inmates, until arrangements are made to build proper accommodation for this class.

The top of the connecting corridors will be available as ambulatories for convalescent patients, and the ground between the blocks on the ground floor will be laid out as gardens.

The administrative block contains on the front the entrance hall, committee-room, library, consulting-room, and medical officer's and matron's apartments. Immediately in the rear of the corridor (with access to same from two branch corridors in the wings) are the general kitchen, and scullery and store-room. Nurses' sitting and dining rooms, matron's needle-room, &c., are provided on the ground floor of the south-west wing. The north-east wing is devoted to dispensary and various stores. On the upper floors of the front block and two wings will be a number of single rooms for nurses' and servants' bedrooms.

The laundry block will contain a large laundry and wash-house, with receiving and delivery rooms, and drying-horse chambers. Also the boiler-house, engineer's shop, dynamo room, and coal store.

Accommodation is provided for two lunatic wards of each sex, with separate attendants' rooms, and padded rooms.

The lying-in ward block comprises a ward for six beds. Labour and quiet rooms, and also separate apartments for nurses on the upper floors.

The stable buildings comprise two stalls and a loose box, harness room, coach and ambulance house, and coachman's bed and sitting-room. The mortuary building will comprise large mortuary chamber, post-mortem room, and relatives' waiting-room, &c.

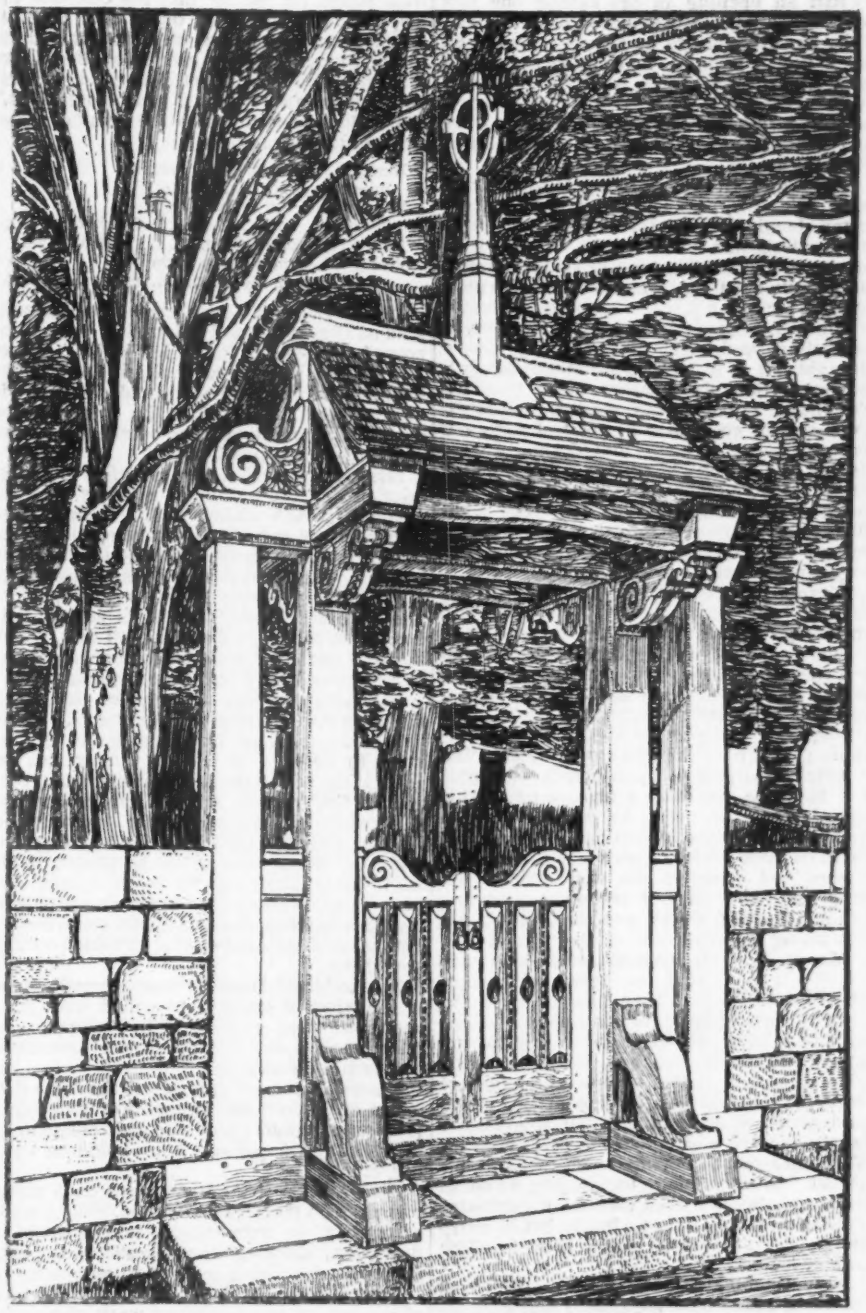
The external walls of the buildings will be faced with yellow stock bricks relieved with red bands and strings, &c., and the roofs will be slated. All ward floors throughout will be solid and fireproof, and constructed with concrete between iron joists. The wards themselves will be plastered throughout, and painted in two heights, the floors being of hard white maple in narrow widths. All corridors will be paved with tiles or granolithic. The staircases and main corridors will have dadoes of coloured glazed bricks. All the sanitary annexes, bath-rooms, and ward kitchens will have high dadoes of light glazed tiling. The laundry and washhouse, and other similar parts of the buildings will be faced internally with glazed bricks throughout.

A deep main drain traverses the whole length of the roadway in the rear of the buildings, eventually joining the sewer in Acton-lane. This main drain will be separately ventilated. Branch systems run between each pair of blocks, each being connected to the main drain with an intercepting trap between. The pipes will be of glazed stoneware, jointed in cement, and laid on cement concrete beds. Manholes will be provided at every change of direction. The surface drainage will be carried by a separate system direct into the main road.

The buildings generally, including the wards, will be heated by open fires, but the latter will also have supplementary heating by means of low-pressure hot-water circulating pipes. The buildings will be lighted throughout by electricity. Natural ventilation is relied on throughout in the wards by means of windows with fanlights over, inlet flues, both at the floor level and at a height of 7 ft. above the floor, and outlet flues at intervals in the centre of the ceilings.

The buildings have been designed by, and are being carried out under the superintendence of, Mr. A. Saxon Snell, F.R.I.B.A. The foundations and main drainage are being carried out by Messrs. Cowley & Drake, of Willesden Green, at a cost of 6,100*l*. The bills of quantities were prepared by Messrs. Northcroft, Son, & Neighbour. Mr. A. G. Hillier is acting as clerk of works.

COTTAGE HOMES, WALLINGFORD, BERKSHIRE.—The three cottages which the Guardians of Wallingford have erected as children's homes were opened on the 7th inst. Messrs. C. Smith & Son, of Reading, were the architects.



Gate with Hood over: Designed by Mr. C. H. B. Quennell.
(From the Pyghtle Works Catalogue.)

TRADE CATALOGUES.

MR. J. P. WHITE (Pyghtle Works, Bedford) sends us an illustrated catalogue of carriage and wicket gates, designed for him by Mr. J. S. Cooper and Mr. C. H. B. Quennell. As he says in the prefatory remarks, "it has hitherto been impossible to obtain either gate or wicket ready made which did not too closely recall the detail and stop-chamfering of the Gothic revival." The remark is significant of the influence of fashion, for thirty or forty years ago the best makers and the best designers were producing stop-chamfered gates and other woodwork, as representing the most artistic style; and possibly thirty or forty years hence some other maker, or Mr. White's own representative at that period, will issue a catalogue of something in a new taste to supersede the one under notice. However, we always thought the stop-chamfering business was over-rated, and there can be no doubt that the gates illustrated in this catalogue, though for the most part exceedingly simple in treatment, are in thoroughly good taste. They show the characteristic treatment of wood in constructions of this kind, with little ornament, the effect being chiefly produced by the shaping and placing of the component parts. In the carriage gate and wicket, for instance, No. 4 in the catalogue, the character of the work is mainly due to the slightly bent shaping of the rails in the upper open-work portion of the gate; a very simple thing, but enough to preserve the work from commonplace. The most ambitious work in the catalogue, No. 8, of which we give an illustration, is intended as an entrance gate and hood either for a churchyard or for an entry in a park wall. Apart from the cross, it perhaps suits the latter situation best.

The British Luxfer Prism Syndicate send us a "Manual of Luxfer Prisms and Electro-glass," which constitutes a scientific *resumé* of the principles on which their glass is designed and the manner of its application to lighting rooms under various circumstances. A diagram is given of the Protractor scale, by which the best shape of prism can be selected according to the height from which the exterior light comes; there is also the Table method, which shows the method of selection when it is desired to concentrate the light on some particular portion of the room. The company state that they could find no data as to observations of the comparative light of the sky under different conditions; we should be surprised to find that there were no such data in existence, though they may not have been published. The Company have carried on an exhaustive series of experiments on the brightness of the sky for every season of the year. They mention as a result that on a cloudy day, between 9 a.m. and 3 p.m., the average brightness of sky light is about 100 candle power per square foot; but for windows this

value must be divided by 4 (reasons not stated), so that an opening in the ceiling one foot square should be estimated at 25 candle-power. This, however, has to be very much reduced for a glazed skylight, in consequence of the interference by the glass itself, by dirt on its surface, &c. The whole publication is useful and interesting, as explaining both the theory and practice of selecting and fixing Luxfer Prism lights.

The Climax Ventilating and Heating Company (Glasgow) send us Part 2 of their Catalogue, showing designs for what are called their "natural exhaust" ventilators. As we have often pointed out, this type of ventilator must necessarily fail to act when ventilation is most wanted, *i.e.*, in hot calm weather, however useful such cowls may be in windy weather, in promoting up-draught and checking down-draught. It is a good point in this catalogue, however, that the makers have provided designs for exhaust cowls which are unpretentious and in good taste in point of form and design; some of them, indeed, show a good deal of original character; we gather from the preface that one object was to make them more architecturally suitable than such additions to a building often are, and in this the makers have certainly succeeded. The catalogue includes also louvres, air gratings, &c.

Messrs. Cort, Paul, & Cornick (Leicester), send us their catalogue of sanitary fittings, including manhole covers and frames of many designs, sewer ventilators, foot-irons for building into manholes; gullies, among which we may mention the "heavy stable gully" with a perforated bucket to intercept particles of straw, &c., and prevent the choking of the drain; street bins for refuse; pumps, including a special cesspool pump which is warranted not to choke, and also a manure or sewage cylinder and air pump, by which the air is exhausted from the cylinder and the sewage takes its place—it is suggested also that these pumps and cylinders are well adapted for emptying gulley pits. A section is given also of their flushing cistern and tank, with a dip box taking the lower end of the siphon.

Messrs. W. F. Dennis & Co. send a catalogue of the goods kept at their wire stores at Millwall Docks. They have adopted the simplest form of index for wires in general use, so that a buyer on opening the page at any gauge number he requires, can obtain at a glance the cost of the various descriptions of wire, the Imperial standard size of each gauge in decimals of an inch, and the approximate length of each size of wire in yards per cwt. The catalogue also includes chains, and the patent "Ditrigon" wire for fencing, a kind of medium between barbed wire and the ordinary cylindrical wire; it has no hooks, but its sharp spiral edges render it inconvenient to climb over or handle.

The Townmead Iron Foundry (Fulham) send us a leaflet with illustration and description of their rising table saw-bench, specially designed for builders and joinery manufacturers who require a quick-cutting accurate saw-bench, which can also be used for cutting tenons, grooving, rebating, and striking small mouldings. The speed for sawing is 1,400 revolutions per minute, the approximate weight 8 cwt. The same firm send illustrations and description of their chain saw mortiser, recommended for the common run of work in sash door and blind factories; the cutting is done by a continuous cutting chain running at a high speed, and so designed that each link has only a small portion of the work to do. The same firm send also an illustration of their locomotive steam crane, in which the carriage is in one massive casting, the axle and travelling shaft brackets bolted to it and provided with loose caps and lock nuts. The post is a steel forging, turned and fitted to the carriage. The revolving frame is built of two rolled steel girders, connected by cast-iron transomes, and revolves on four anti-friction rollers. Each crane is thoroughly tested with its full load before delivery.

The Sun Fan Company, Bradford, send illustrations and description of their "Sun" fan, stated to be an improved type of Blackman fan. The whole of the frame which carries the fan being made of malleable or wrought iron, making it unbreakable under ordinary conditions, and decreasing the weight considerably. "The fan centre is made in the form of a pyramid, the flat sides of which form solid faces for securing the inside edges of the blades to, giving greater rigidity to them; the special form of centre also gives direction to and a freer access for the air into the centre of the fan, and the enlarged outer end prevents swirling and the return of air into the fan on the discharge side; by modifying the size of the centre and the form of blades, any reasonable amount of resistance can be overcome." The following is given as the result of a test made in January last:—

"Number of revolutions per minute.....	300
Volume of air moved per minute.....	89,468 cubic feet.
Power required to drive.....	5·1 h.-p. net.
Volume of air moved per horse power per minute.....	17,543 cubic feet."

Messrs. Lewis & Lewis, engineers (Fulham), send an illustration and description of their improved high-speed frame for sawing stone. The framing is of rolled steel joists and angles strongly stayed and bolted, and the front is open so that the stone to be sawn can be dropped into position by an overhead traveller The feed-motion is self-acting.

Messrs. Koch & Co. send a leaflet with description and illustration of a safety-hook for coupling, which claims to be secure from opening itself, but which can be opened when freighted and in tension without the necessity of easing the connexions. It is necessary to experiment with such a thing actually, before one can feel satisfied as to its action; it is apparently a hook with a long tail to it, which acts as a guard against accidental opening, and as a lever to draw it out when required.

We have received a pamphlet describing Husson's Safety Acetylene Generators. These generators take up very little space, and are made to be used in country houses, &c., for generating acetylene gas for illuminating purposes. Carbide can now be bought cheaply, and many cyclists use it for their lamps. Making acetylene gas in bulk and storing it is, however, not a process to be trusted to the uninitiated. Many experts are of opinion that there is great danger of it forming explosive compounds when in contact with some metals. Several accidents have been explained on this hypothesis.

Mr. Archibald Dawnay issues a small volume of the tables of strength of rolled steel joists and compound girders, with sections; also tables of sizes and strength of steel stanchions and cast-iron columns.

Messrs. Measures issue, about the same size, tables of sections and strengths of rolled steel joists and girders; they also call attention to their heating apparatus, lamp columns, fencing, &c.

Messrs. Fred. Jones & Co. send us a useful pamphlet on their silicate cotton, giving some account of its manufacture, and sections of floors, &c., showing its application for filling spaces for insulating and other purposes.

Messrs. Hamilton & Co. send us a catalogue of brushes for house painters' work, also graining finishers, palette knives and sable brushes for artistic work; soldering lamps of various kinds; paint stainers and paint mills; wire brushes for foundry use, &c.

BOOKS RECEIVED.

LAVORI DE RESTAURO ESEGUTI AL CASTELLO DI MILANO. (Milan: Umberto Allegretti.)

BUSINESS TERMS AND PHRASES, with equivalents in French, German, and Spanish. (Pitman & Co.)

DENDERAH: Seventeenth Memoir of the Egyptian Exploration Fund. (Kegan Paul, Trench, & Co.)

ILLUSTRATED TOPOGRAPHICAL RECORD OF LONDON: First, Second, and Third Series. (London Topographical Society.)

FOUNTAINS ABBEY, YORKSHIRE. By W. H. St. John Hope. (Reprint from Yorkshire Archæological Journal.)

THE ART AND CRAFT OF GARDEN-MAKING. By Thomas H. Mawson. (B. T. Batsford.)

RE-OPENING OF ST. JOHN'S CHURCH, BLACKBURN.—St. John's Church, Blackburn, was re-opened recently, after undergoing restoration. The chancel has been widened and a chancel arch erected. The east wall has been set back some 9 ft., and the east window has been placed higher, as the floor of the chancel has been raised. Mr. T. H. Duerden was the architect. The masonry was carried out by Mr. Jas. Thompson, the joinery by Messrs. Marshall & Dent, the plastering by Mr. W. Standing, the plumbing by Mr. Davies, and the painting and decorating by Messrs. R. J. Duerden. Messrs C. H. Woods & Co. have installed the electric light, and two stained-glass windows have been inserted by Messrs. Seward & Co., of Lancaster.

Correspondence.

To the Editor of THE BUILDER.

ANCIENT LIGHTS.

SIR,—Will you kindly grant me a small space in your paper in which to supplement the version of my observations in the discussion on ancient lights at the recent meeting of the Institute, as given by your reporter in your last issue?

What I pointed out was that under the existing law as laid down for us, both by Mr. Moulton and Mr. Strahan, the judges in cases of threatened injury had now the power to give relief by injunction or damages by the operation of Lord Cairns' Act.

That, this being so, no case for extra Parliamentary powers to enable a judge to deal with such matters by way of damages instead of injunction, as had been suggested, had been made out. As regards the other point brought forward, namely, the abolition of the possible acquisition of rights to light by prescription, the case may be different.

In short, we are told by eminent counsel that the law is sufficient, but that the judges in the exercise of their discretion do not see fit to fully exercise it. Mr. Moulton used the term "timidity" in reference to this, and I ventured to suggest a surveyor's reason for the judges' attitude, at the same time asking whether it might be possible, by the Institute and other influential bodies respectfully approaching them, to induce them to enforce their powers more strongly.

E. GREENOP.

The Student's Column.

DETAILS OF STRUCTURAL IRON AND STEEL.

15.—THE STRENGTH OF COLUMNS.

FROM the academic point of view there are clearly marked distinctions between columns, pilasters, stanchions, and struts. These differences are more important in decorative than in constructive design. Art, on the one hand, seeks variety of form for its due expression, whilst Science, on the other, strives to disregard merely external considerations, and to look at the essential nature of things. Thus, from the strictly scientific standpoint, all members of a structure, which are exposed to direct compressive stresses in the direction of their lengths, belong to one class, and are subject to one set of rules. Such members may either be isolated or built into walls, or they may be parts of a framed structure. They may be of different shapes, and be called by different names, but their inherent properties are not thereby affected except in degree.

For these reasons we shall include in this elementary consideration of columns all members designed for the resistance of pressure applied in the direction of their length, and the rules which will be given for the calculation of strength must be understood to apply generally to all such parts employed in structural work.

Cast-iron columns are very extensively used in all kinds of buildings, and will doubtless continue to be used. Circumstances which conduce very much to their popularity are the readiness with which they may be procured, and their general adaptability to the exigencies of architectural design. The last-named recommendation is to some exent a demerit, for the reason that it tends to encourage the employment of unprotected ironwork in a manner entirely contrary to the most approved methods of fireproof construction. In cast-iron columns there is always present the risk of flaws, blow-holes, irregularities of section, and variations of quality due to foundry operations. Such contingencies are inseparable from the use of cast-iron columns, and a further drawback is to be found in the fact that brackets and lugs, which are cast on for the connexion of other members, are apt to break off without warning of any kind. Failures of cast-iron columns are usually attended by serious damage, and the utmost vigilance should be exercised with regard to all details connected with their design, manufacture, and erection. The statement is frequently made that cast iron is more readily affected than wrought iron or steel by the action of fire. It appears, however, to be the fact that unprotected cast iron is practically unharmed by temperatures as high as 1,300 or 1,500 deg. Fahr., whilst wrought iron and steel begin to yield at temperatures of about 1,000 or 1,200 deg. Fahr. In support of these state-

Fig 149.

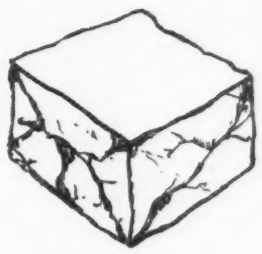


Fig 150.

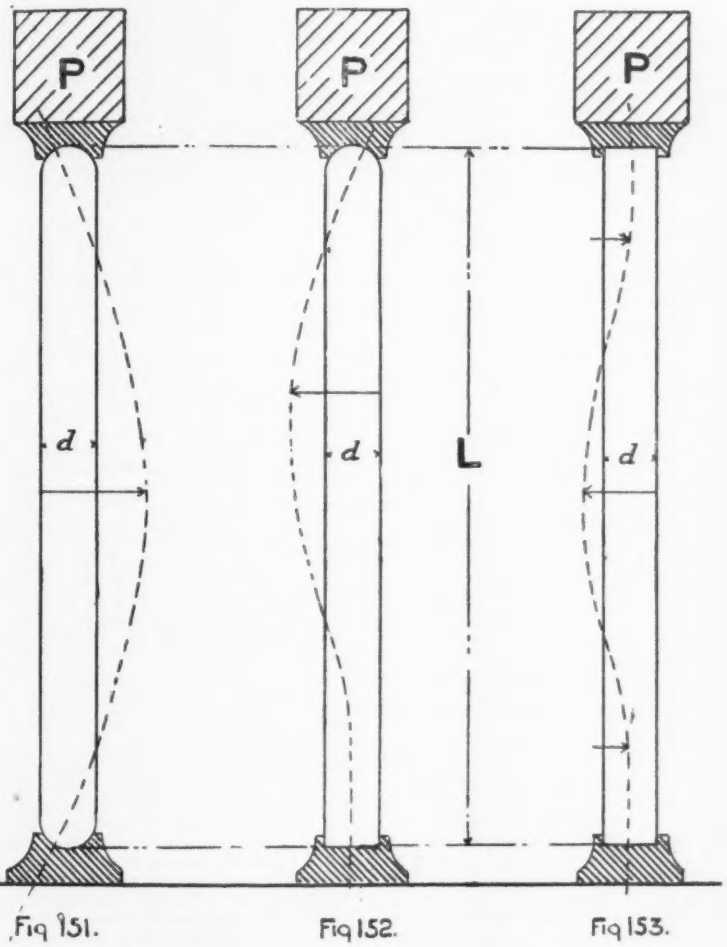


Fig 151. Fig 152. Fig 153.

Illustrations to Student's Column.

ments, we may cite the experiments of Professor Bauschinger, of Munich; of the New York Committee representing the Architectural League of New York, the American Society of Mechanical Engineers, and the Tariff Association of New York; and, further, the official reports upon the fires in the Ames Building in Boston, U.S.A., and in the Horne Building, Pittsburg. It should never be forgotten that protection of cast iron is necessary, because in most fires the temperature would be much greater than any which could be safely endured by cast-iron columns. The same remark applies more forcibly to wrought iron and steel because of their comparatively smaller resistance to heat. So far as corrosion is concerned, it is generally admitted that cast iron is not affected in the same degree as wrought iron and steel, and as the metal is always thicker, the proportion of rust to sectional area is necessarily smaller. Cast iron is protected by the silicious skin received in the sand mould, and the surface is comparatively free from rivet and bolt holes, projections and joints, which aid the collection of moisture. Moreover, the superficial area is always less in a cast-iron column than in a wrought-iron column of equal strength, and consequently there is a smaller surface exposed to corrosive influences. These reasons point to the superiority of cast iron; but as a matter of fact the advantage is more apparent than real, because if wrought iron and steel are reasonably protected they are very little more susceptible than cast iron to corrosion.

Exhaustive investigation has been made by able mathematicians, and notably by Euler, with the object of demonstrating the laws which govern the strength of columns, but the results so achieved apply to the ideal and perfect column, and not to one which exhibits the imperfections inseparable from all things made by man. Consequently, the rules used in practice for determining the strength of columns are considerably qualified by empirical coefficients intended to represent the results afforded by experimental inquiry.

Euler assumed the existence of a certain ratio of length to diameter below which the material constituting a column would be fractured by direct compression, and above which it would fail by reason of transverse strain. Euler's theory may be thus illustrated:—Assume that a straight column of uniform section, and symmetrical as to elasticity, is fixed in such a way that when loaded axially, it shall be free to bend along its entire length. Supposing curvature to be produced by the momentary application of a transverse force, there will be a bending moment at every section. If the load be sufficiently great, the deflection will continue or will increase; whilst if the load be not sufficiently great, the column will resume its normal shape. In this assumed case the influence of the load is resisted by the elasticity and inertia of the column. The modulus of elasticity depends upon the nature of the material; the moment of inertia is governed by the form of its cross-section; and both these measurements are qualified by the ratio between length and diameter. Euler arrived at the conclusion that the strength of a long column would be directly proportional to the 4th power of its diameter, and inversely proportional to the square of its length, and his theory demonstrates the desirability of adopting sections in which the moment of inertia is proportionately large. Hodgkinson's experiments, conducted in the year 1840, still constitute one of our chief sources of knowledge as to the strength of columns. Briefly summarised, the following are the conclusions to be derived from his inquiry. Short columns, in which the height is not greater than four times the diameter, are fractured by actual crushing of the material; sometimes, as shown in fig. 149, the end slides off in the form of a wedge, the height of which is rather less than 1·5 diameters, and when the height is less the sides are split, as in fig. 150. Medium columns, whose length is less than 30 and more than 5 diameters, are distinctly affected by bending stress, but the weight required to cause fracture in this manner is so great that crushing force becomes manifest, and the column yields to the joint action of the two forces. Long columns, whose length is not less than 30 diameters, fail by flexure, and although pressure tends to cause failure by vertical compression, still the direct breaking weight is far below the crushing strength of the material.

Hodgkinson's experiments also showed that the strength of a column is affected by the form of the ends and the manner in which they are fixed. He therefore divided columns into three main classes:—

1. With both ends spherical.
2. With one end spherical and the other end flat.
3. With both ends flat.

The relative strengths of these three classes are 1, 2, and 3 respectively, and an example of each type is shown diagrammatically in figs. 151, 152, 153, where the direction of flexure is approximately indicated by dotted lines, and the point or points of fracture are shown by arrows. When flat-ended columns have discs cast upon the ends, strength depends less upon the presence of the discs than upon the manner in which they are fixed. If the tops and bases be faced in the lathe, and the foundations be dressed off level, the maximum strength will be attained. If the column be irregularly fixed, so that the pressure is taken diagonally, only one-third of the maximum strength will be developed. If the ends be roughly faced by chipping off irregularities with a cold chisel, inequalities of the bearing surfaces will cause the weight to come upon a few points at the ends, which cannot then be truly perpendicular to the axis. In such a case strength should not be taken as more than two-thirds of the maximum. It is now usual for engineers to draw distinctions between columns with round, pivotted, hinged, pin, flat, and fixed ends. Within certain limits, the value of each of the first four of these types is taken as 1, and of the last two as 2.

The properties observed by Hodgkinson apply to pillars of wrought iron, steel, and wood, as well as to those of cast iron, although strength is governed in each case by the nature of the material and other factors. As the general result of his investigation, Hodgkinson found that the strength of a column depended upon the nature of the material, and also that it varied directly as the 3·6th power of its diameter, and inversely as the 1·7th power of its length. Hodgkinson's formula in its simplest form is: $P = m \times \frac{d^{3.6}}{l^{1.7}}$, and bears a sort of family resemblance to that of Euler. Variations of the rule, and of the value expressed by the coefficient m, are necessary for computing the strength of columns of different forms, and as tables of the 3·6th and 1·7th powers, or alternatively of logarithms, are also required, Hodgkinson's formula has never been popular, and is very seldom used by engineers.

Various attempts have been made to embody the valuable data obtained by Hodgkinson in the form of a simple rule which might be convenient for general use. A formula of this kind was first suggested by Professor Gordon, and

it assumes failure to result from a combination of crushing and bending stress. Gordon's rules are thus written :—

(*a*) For columns with both ends flat and fixed

$$P = \frac{f S}{1 + a\left(\frac{l}{d}\right)^2}$$

(*b*) For columns with rounded or jointed ends

$$P = \frac{f S}{1 + a\left(\frac{l}{d}\right)^2}$$

The following are the significations of the symbols used :—

P = breaking load of the column in tons,
S = sectional area of the column in square inches.
l = length of the column in inches.
d = least diameter of the column in inches.
f = strength of the material.
a = a constant depending upon the sectional form of the column.

By altering the value of the coefficients, f and a, Gordon's formula may be employed for calculating the strength of cast-iron, wrought-iron, and steel columns of various sections. Table XL. gives the most generally accepted values of the coefficients f and a used in connexion with Gordon's formula :—

Table XL.—Values of Coefficients for Gordon's Rule.

Section of Column.	Metal.	Value of f.	Value of a.
Round, solid	Cast-iron	36 tons	·0025
„ hollow	„	36 „	·0025
Rectangular, solid	„	36 „	·002
„ hollow....	„	36 „	·002
Round	Wrought-iron	16 „	·00033
Rectangular	„	16 „	·00033
I, T, L, &c. (Unwin)....	„	19 „	·0011
Round, solid (Baker)	Steel	30 „	·0007
Rectangular, solid „	„	30 „	·0004

In applying Professor Unwin's modification of the rule for miscellaneous sections of wrought iron, it should be noticed that the diameter to be used is found by taking the shortest diameter of a rectangle or triangle circumscribing the section. As the quality of steel supplied on ordinary building contracts is not usually equal to that demanded in important engineering works, it is preferable to calculate the strengths of steel columns by the aid of the same coefficients as are employed for wrought iron. In this connexion it may be noticed that the values of f adopted by the New York Building Department are 80,000 lbs. = 35·7 tons for cast iron ; and 40,000 lbs. = 17·85 tons, for both wrought iron and steel.

Modifications of the Gordon rule, applicable to columns of any section, were recommended in the following forms by the late Professor Rankine :—

(*a*) For a column fixed at both ends

$$P = \frac{f S}{1 + \frac{l^2}{c r^2}}$$

(*b*) For a column with both ends rounded or jointed

$$P = \frac{f S}{1 + \frac{4 l^2}{c r^2}}$$

(*c*) For a column with one end fixed and the other rounded or jointed

$$P = \frac{f S}{1 + \frac{16 l^2}{9 c r^2}}$$

Here, the symbols and their significations are :—

P = breaking load of the column in tons.
S = sectional area of the column in square inches.
l = length of the column in inches.
r = least radius of gyration of the section.
f = strength of the material.
c = a coefficient depending on the nature of the material.

Table XLI.—Values of Coefficients for Rankine's Rule.

Metal.	Value of f.	Value of c.	Value of r^2.
	lbs. tons.		
Cast Iron....	80,000 = 35·7	$\frac{1}{3,200}$	$\frac{I}{A}$
Wrought Iron	36,000 = 16·07	$\frac{1}{36,000}$	„
Mild Steel ..	48,000 = 21·42	$\frac{1}{30,000}$	„

OBITUARY.

MR. HENRY JARVIS.—We regret to announce the death, on the 11th instant, at 502, Lordship-lane, Dulwich, of Mr. Henry Jarvis, of 29, Trinity-square, S.E., in his eighty-fifth year. Mr. Jarvis was formerly District Surveyor of St. Giles, Camberwell, during a period of thirty years. His architectural works include, we understand, the churches of St. John, York-street, Walworth (1860) ; St. Matthew, Newington (1867) ; St. Paul, Kingsdown-road, Upper Holloway (1869-70) ; St. Stephen, the Common, Walworth (1870-71) ; All Souls, Grosvenor-park, Newington (1871) ; St. Augustine, Lynton-road, South Bermondsey (1878) ; and St. Mark, East-street, Walworth (Henry Jarvis & Son, 1873). To the last-named church, which has a nave with a span of 37 ft., was removed the organ—by Renatus Harris, the younger, 1724—from St. Dionis Back-church, in Fenchurch-street, after the demolition of the latter in 1878. The firm of Henry Jarvis & Son were appointed last year to carry out some extensive additions and alterations at the workhouse in Constance-road, Camberwell, for the Guardians of the Parish of St. Giles.

GENERAL BUILDING NEWS.

WESLEYAN CHURCH, DARWEN, LANCASHIRE.—A new Wesleyan church has just been erected at Darwen, in the Bolton-road. The new church occupies a site in front of the existing school-chapel, and has frontage to Bolton-road and Epworth-street. It consists of nave with deep transepts and chancel, with organ chamber, tower, minister's vestry, and choir vestry, with the usual adjuncts. The two main entrance doors give access to a vestibule leading to the church. Above this vestibule, and approached from the same, is the Sunday school scholars' gallery. The total seating accommodation of the church is 514 adults, or 680 mixed congregation. The building is faced with Yorkshire parpoints, the dressing being of Runcorn red sandstone. The chancel and gallery have four-light tracery windows ; the windows are fitted with lead lights. The joiner's work in the interior is of pitch-pine. The choir stalls, reredos, pulpit, and the font with a basin of alabaster, and the communion table, are in Dantzic oak, carved. The chapel is lit by electricity. The heating is by hot-water, on the low-pressure system. The tower, at the angle of Bolton-road and Epworth-street, is open in the upper part with light tracery, and is surmounted with a timber spire covered with green Westmoreland slates. Those who have taken part in the erection of the church are as follow :—Mr. J. B. Thornley, architect, under whose superintendence the whole of the work has been carried out ; Mr. R. J. Whalley, building and joinery work ; Mr. R. J. Knowles, plumbing ; Mr. A. Airey, heating ; Mr. Barton, Blackburn, electric lighting ; Messrs. Stott & Co., Oldham, ventilating ; Messrs. Williamson & Watson, Liverpool, glazing ; and Messrs. Harry Hems & Sons, Exeter, pulpit, choir stalls, and chancel furniture.

HIGH SCHOOL FOR GIRLS, JESMOND, NORTHUMBERLAND.—New premises have been built in Eskdale-terrace, Jesmond, for the Central Newcastle High School for Girls. On the ground floor is the main hall, 81 ft. by 30 ft. There is also a physical laboratory, a kindergarten room, and rooms for the headmistress and the secretary. On the first floor there are nine class-rooms and a sitting-room for the assistant mistress, whilst on the top floor there is a dining-room, a studio, two class-rooms, a chemical laboratory, a kitchen, scullery, &c. The building is heated on the low-pressure hot-water system. Messrs. Oliver & Leeson, Newcastle, were the architects, and the contract has been carried out by Mr. Geo. H. Mauchlen, of Newcastle, the clerk of the works having been Mr. Matthew Dodd.

BOARD SCHOOL, BLACKBURN.—The new Accrington-road Board School, Blackburn, was opened recently. The architects were Messrs. Cheers & Smith.

TOWN HALL, LEIGH, LANCASHIRE.—A town hall is to be built at Leigh, from a design by Mr. J. C. Prestwich, architect, of Leigh.

HOTEL, HOVE.—The Hove Corporation have approved the block plans for the proposed new hotel which is to be erected on the site of Mill's Terrace, and which it is proposed to name the "Royal King's Hotel." The building will be quite isolated, with frontages to King's-road and the sea front, now the foreshore, along which the Corporation will continue the present esplanade. The principal entrance will be from the return end, facing the lawns, and looking towards Brighton. It is intended to provide a roof garden which will gain an uninterrupted view the whole length of King's-road to West Pier. A winter garden will also be embodied in the scheme. The plans will provide for the rooms to be let in flats in varying sizes or singly. Messrs. Palgrave & Co., London, are the architects. The cost will be about 130,000*l*.

FLATS, LONDON.—A block of residential flats, "Crescent Mansions," is now in course of erection on the site of 122, Elgin-crescent, Notting Hill, W. (to the new frontage line recently passed by the County Council), under the direction of Messrs. Palgrave & Co., architects. The elevations will be a type of Queen Anne, and contrast of colour will be given by green shutters to the windows. A circular angle turret will commence on the second story. The roof will be covered with green slates. Messrs. E. Collins & Co. are the builders.

PRIORY COURT, HAMPSTEAD, N.W.—A block of residential flats with a frontage of 250 ft. to Mazenod-avenue, is now approaching completion. The entrance is by a garden court and carriage sweep, with a fountain in the centre of the lawn. The building contains twenty-seven complete flats. Messrs. Mead & Burton are the contractors, Mr. J. Farrell clerk of works, and Messrs. Palgrave & Co. architects.

CLUB, GOSFORTH, NORTHUMBERLAND. — New premises have been erected in West Avenue, Gosforth, for the accommodation of the Men's Club. The building adjoins the Assembly Rooms, to which it is connected by a passage at the rear, in order that on special occasions both may be used for social gatherings. It has been built of brick with stone dressings, and has a frontage of 52 ft., with a depth of 112 ft. The main entrance is from West Avenue. On the first floor there is a billiard-room, and behind this are meeting, supper, and committee rooms and other conveniences. A covered quoit ground adjoins the building. On the first floor is a room which will be used as a library and reading room, while rooms for games, conversation, and the work of the committee are also provided. At the rear is the caretaker's house. Messrs. Hicks & Charlewood were the architects for the building ; Mr. W. C. Fleck, of Gosforth, was the contractor.

PREMISES FOR THE EASTERN TELEGRAPH COMPANY, FINSBURY.—The foundations of a building for the Eastern Telegraph Company are being laid at the corner of South-place and Finsbury-pavement. The premises will be erected from the designs of Mr. John Belcher.

ALMSHOUSES AND CONVALESCENT HOME, SHEFFIELD. — Blocks of almshouses have just been erected at Sheffield, and a convalescent home is now being built, in accordance with the terms of the George Woofindin bequest. The almshouses are situate at Hunter's Bar, at the corner of Ecclesall-road and Brocco Bank. The houses are in three blocks, of six almshouses in each, forming a quasi-crescent on plan, standing upon a raised plateau, with a terraced roadway in front and carried round the back of the buildings. The Porter Brook passing through the grounds has been bridged over at the west end to form a carriage entrance, and a rustic foot bridge spans it, as a shorter communication citywards. The walls are faced with red bricks from the Thurstonland Works, near Leeds, with dressings of Stoke stone, the roofs being covered with Broseley tiles. Each cottage or almhouse contains a living room, scullery, and larder, with the usual offices, with two bedrooms on the upper floor, and the centre block in addition provides a reading-room for the use of the inmates. The architect of the new buildings was Mr. W. R. Bryden, Buxton, Derbyshire, the builder being Mr. James Salt, of Buxton. Mr. Eayres executed the wrought iron fencing and gates from the architect's designs ; and Messrs. Killer Bros., of Wirksworth, supplied the polished Hopton Wood chimney pieces in reading-room, and Messrs. Moorwood, Sons, & Co. the ranges, stoves, &c.—The site of the convalescent home is situated at Whiteley Wood, with a southern aspect overlooking the valley purchased by the Corporation for the public park extension. The site contains about 16¼ acres, and a carriage-drive has been constructed through the property from Whiteley Wood Lodge to Fulwood, thus affording two approaches to the home. It is expected that the building will be ready for occupation at the end of the year. Accommodation is being provided for about forty patients. The building is two stories high. On the ground floor is the dining hall, which, together with the principal entrance hall, occupies the centre of the front. This apartment, which is 50 ft. by 24 ft., is being wainscotted all round for a portion of its height with oak, and the entrance hall is separated from the dining hall by an oak screen. It is intended to be used for entertainments as well as refreshments. To the east and west of this central portion are respectively the women's and the men's wings. The women's wing contains an entrance hall, with separate entrance and staircase, reading and writing room, and parlour. The men's wing contains similar entrance and staircase, reading and writing room, parlour, and billiard and smoking room. A verandah extends in front of each wing for the use of the patients. A straight corridor runs behind the above-mentioned rooms from one end of the building to the other, and at the ends are placed box-rooms, lavatories, cloak-rooms, &c. On the north side of this corridor are the offices, containing kitchen, scullery, servants' hall, and store-rooms. On this side also, in the men's wing, is the porter's sitting-room. On the first floor are the bedrooms, those for men being, as in the case of the day rooms, in the west wing, and for women in the east wing. In these the cubicle system has been adopted, the space being divided by means of wood partitions, 7 ft. high, into rooms for two or three beds. The windows of the cubicles on the south front are treated as French casements, opening on to the balcony over the verandahs, and admitting of patients being wheeled outside. Lavatories and bath-rooms are provided at the ends of the wings as on the ground floor, and at each end there is an emergency door and an outside escape staircase in case of fire, and fire hydrants are also

provided. The central portion over the dining and entrance halls and raised above the wing floors is divided into two parts, that to the front being subdivided into cubicles, and so planned that it can be used as an alternative ward for either wing, so as to provide for the fluctuation of the relative number of patients of each sex, that to the back being sub-divided into cubicles, baths, &c., for the servants. Two separate rooms for use in case of sickness are also provided, one in each wing, and quite separate from the other bedrooms for isolation. The building is faced all round with the Enfield Company's red-pressed bricks from Accrington, with Matlock stone dressings. All the floors are of concrete construction, and will be covered with pitch pine blocks and terrazzo mosaic. The roofs are covered with Peake & Co.'s mottled tiles. A turret with a clock crowns the centre of the building. The architects are Messrs. Hemsoll & Paterson, of Sheffield. The general contractors are Messrs. Dawson & Jones, of Huddersfield and Sheffield. The heating, which is on the low-pressure hot-water system, is being carried out by Messrs. Newton, Chambers, & Co.; the domestic hot-water supply by Messrs. Braithwaite & Co., of Leeds and Sheffield; the ventilation is by Messrs. J. Bedford & Co., of Halifax; the wood block floors by Messrs. De Grelle, Houdret, & Co., of London; the terrazzo floors by Mr. J. F. Ebner, of London; the electric bells and telephones by Messrs. Johnson & Co., of Sheffield; and the leaded lights by Messrs. Jeffrey & Foster, of Sheffield. The buildings are being wired and fitted for electric light by the Sheffield Corporation.

DOULTON MEMORIAL INSTITUTE, LAMBETH.—A building has been erected in High-street, Lambeth, as a memorial to Sir Henry Doulton. In the elevation Doulton glazeware is used. There are a hall, capable of holding 400, a billiard-room, reading-rooms, &c., and the electric light is installed. The architect was Mr. Hardcastle; Messrs. Parsons were the builders, Mr. Starkie Gardner did the art iron-work, and the leaded glazing is by Janes & Co. Opposite the platform in a niche is a bust of Sir Henry Doulton, by Mr. George Tinworth. Underneath is an inscription.

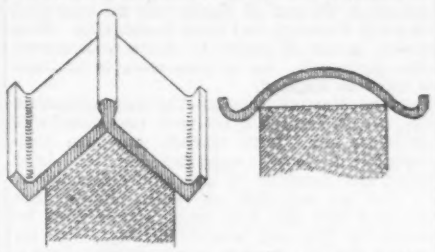
RELIGIOUS INSTITUTE, MANCHESTER.—The new Religious Institute, in Deansgate, Manchester, was opened on the 5th inst. The building is three stories in height, the lower story of the frontage being constructed of red sandstone from Derbyshire, with red Rose of Mull granite in columns and bases. The superstructure is executed in Ruabon red brick and terra cotta. The main entrance is in Deansgate. The ground floor is occupied mainly by two shops, with offices and stores, one for use by the Religious Tract Society, and the other by the British and Foreign Bible Society. On the first floor are the offices, stores, &c., to be occupied by the City Mission, and a board-room, about 30 ft. by 23 ft., for the common use of the societies. This room has a light oak dado and mantel, and an ornamental plaster ceiling. On the second floor is a meeting-room, with the usual ante-rooms, which provides seating accommodation for about 450 people. Messrs. Robert Neill and Sons were the general contractors, and Mr. Henry Lord, of Manchester, was the architect.

FOREIGN.

FRANCE.—On the occasion of the opening of the Paris Exhibition M. Bouvard, the general directing architect, was created "Grand Officier" of the Legion of Honour, and the rank of "Officier" in the Legion of Honour was conferred on M. Girault, architect of the "Petit Palais"; M. Bernard, architect of the new bridge; M. Raulin, architect of the Salle des Fêtes; M. Scellier de Gisors, architect-in-chief of the Colonial Exhibition; and MM. Thomas and Deglane, joint architects of the "Grand Palais." Four other architects, MM. Cousin, Devienne, Lafon, and Louvet, have been created Chevaliers of the Legion. —— The jury in the competition for the Prix Chenavard have awarded the first prize to M. Louis Faure-Dujarric, pupil of M. Pascal, for his design for "Municipal Baths on the Champ de Mars;" the second to M. Goujeon, pupil of M. Laloux, for his monument "Aux Défenseurs de la Patrie."——The new buildings of the municipal schools in the Rue Jean Baptiste Say, at Auteuil, were opened a few days ago. M. Germain Salard is the architect. The buildings have cost about 2,100,000 fr.——The Académie des Beaux-Arts has awarded the "Prix Duc" to M. Georges Chedanne, for his design for the Palace Hotel in the Champs Elysées (illustrated in the *Builder* of January 6 of this year).——The French Government have offered to the city of Paris a fountain in ceramic ware, executed at the Sevres manufactory, and which it is proposed to erect near the Grand Palais on the Champs Elysées.——The Municipal Council of Paris have authorised the erection of a statue of Auguste Comte on the Place de la Sorbonne.——M. Chesnay, architect, of Paris, has obtained the first premium in the competition for new schools at Maisons-Laffitte.——The death is announced of M. August Leveillé, an engraver on wood of no ordinary talent, and who was a member of the Société des Artistes Français. He received medals in the Salons of 1885, 1888, and 1889, and the Cross of the Legion of Honour in 1894.

MISCELLANEOUS.

IMPROVED COPING TILES.—Mr. W. A. Williams, architect (London), sends us drawings and description of a coping tile for gables, party-walls, &c., which has the edges turned up so as to form small gutters, and prevent the rain running down the walls. Small pipes, to discharge into the main gutter, are fixed at the lower end of gable copings. We subjoin the sections of the tile as proposed for



gables and for party-walls. There is also a wider spreading one, on the same principle, for fruit walls.

INSTITUTE OF SANITARY ENGINEERS (INCORPORATED).—At a meeting of the Election Committee held on the 11th inst., the following gentlemen were elected, viz.:—Members: S. Crawshaw, India, Capt. C. H. Vasturme, Woolwich; Associate: F. B. Patch, London.

DRILL HALL AND ARMOURY, ST. MARYLEBONE.—The headquarters and drill-hall of the 5th (West) Middlesex Rifle Volunteers—the Marylebone corps—were taken about three years ago for the construction of the Great Central Railway. Subscriptions are invited towards a building fund for the erection of new quarters, together with a drill-hall and armoury, upon a site on the Portman estate which has lately been obtained on behalf of the corps. A sum of about 6,000*l.* is needed, besides the amount received as compensation from the railway company, the estimated necessary outlay being nearly 9,000*l.*

DISCOVERIES IN CRETE.—The Athens correspondent of the *Times* writes under date of April 10:—"The excavations carried out by Mr. Arthur Evans and Mr. D. G. Hogarth in Crete continue to yield results of the highest interest. On that portion of the site of ancient Knossos which Mr. Evans has selected for investigation (Kephála) a Mycenæan palace has been discovered containing relics of extraordinary importance by means of which the hitherto uncertain question of Mycenæan writing has been finally settled. In the chambers of the buildings have been found a whole series of clay tablets, analogous to the Babylonian, but with indigenous Cretan script. These tablets are apparently palace archives. On the south front of the building the entrance hall of the *megaron* has come to light, and in the adjoining corridor is a large piece of fresco representing a full-size figure of a girl in Mycenæan costume, holding a long vase. In brilliancy of colouring and grace of form the figure surpasses anything hitherto discovered belonging to this period. The remains belong to the great Mycenæan age, about 1400 B.C."

THE EXPLORATIONS AT WINCOBANK, SHEFFIELD.—The members of the Sheffield Naturalists' Club met at the lecture-room in Leopold-street on the 12th inst., to hear a lecture by Mr. E. Howarth, Curator of the Weston Park Museum, on the subject of the excavations recently carried out at Wincobank Hill. The lecturer explained that speculation had been rife for a long time as to the true character of what had been popularly known as the Roman Camp on Wincobank Hill. The work of exploration was begun on July 25 last year and continued until well on in October, two men supplied by the City Surveyor being employed during that time. Mr. Howarth went on to describe the camp and the explorations made, whereby it was discovered that the inner rampart had been built up of stone, and was not an earthen rampart at all. This inner rampart was complete all the way round, but the outer rampart was less perfect. In the ditch between the outer and inner ramparts they found a wall which appeared to go all the way round, and which had been built up of rough unworked stones, without any sign of mortar. This was not the way the Romans did their building. The site of the camp showed no evidence of occupation whatever, so that it had evidently been a camp of refuge, to which people could flee in time of danger. This was evidenced by the discovery of the site of a hut outside. Some pieces of Roman pottery, evidently parts of a cinerary urn, were found whilst the ditch was being excavated, and proved that the Romans had been there, but the form and structure of the camp showed that they had not erected it; and the discovery of some blunt instruments at one part of the rampart proved an earlier occupation than that of the Romans. It might, therefore, be safely concluded that the camp was of ancient British origin, and not Roman.

STREET IMPROVEMENTS, LEEDS.—Mr. E. A. Sandford Fawcett, an Inspector of the Local Government Board, held an inquiry at the Leeds Town Hall on the 12th inst. relative to the petition of the City Council for a Provisional Order to put in force the powers of the Lands Clauses Acts, with reference to lands required for the widening of Cookridge-street and the extension of Albion-place. The proposed line of widening runs through the Roman Catholic Cathedral, but the Corporation have come to a conditional agreement with the authorities of that church. It is suggested that a portion of the land scheduled between Great George-street and St. Ann's-street shall be given to the Roman Catholic body as a site for a new cathedral. The minimum width of Cookridge-street, at the cathedral corner, is 34 ft. 5 in., and it is suggested to make it 85 ft. wide. The Inspector went through the plans with Mr. Jeeves, the Town Clerk, and Mr. Hewson, the City Engineer.

THE ORDNANCE SURVEY.—The Government will shortly ask the House of Commons for a vote of 207,600*l.* to defray the expenses for the current financial year of the survey of the United Kingdom and of minor services connected therewith. In justification of the expenditure the following particulars are given of the work being accomplished, together with approximate statements of the further amounts required, and the dates proposed for completion. 1. Completion of the new series engraved 1-in. map, with hills: amount required for the year 1900-1, 6,500*l.*; approximate further amount required for completion, 17,250*l.*; probable date of completion, December 31, 1902. 2. Maintenance and revision of the 1-in. map of Great Britain, 2,000*l.* 3. Special revision of the 1-in. map of Ireland: amount required for the year 1900-1, 7,500*l.*; approximate further amount required for completion, 5,000*l.*; probable date of completion, March 31, 1903. 4. Special revision of the ½-in. map of England: amount required for the year 1900-1, 1,500*l.*; probable date of completion, March 31, 1901. 5. Preparation of an engraved ½-in. map of Scotland, amount required for the year 1900-1, 1,000*l.*; approximate further amount required for completion, 1,000*l.*; probable date of completion, March 31, 1902. 6. Preparation of a ½-in. map of Great Britain, with hills: amount required for the year 1900-1, 1,000*l.*; approximate further amount required for completion, 2,000*l.*; probable date of completion, December 31, 1902. 7. Revision of the ½-in. maps of Ireland, in outline and with hills: amount required for the year 1900-1, 500*l.*; approximate further amount required for completion, 4,000*l.*; probable date of completion, December 31, 1905. 8. Special revision of the engraved $\frac{1}{10}$-in. map of Great Britain: amount required for the year 1900-1, 500*l.*; approximate further amount required for completion, 1,200*l.*; probable date of completion, March 31, 1902. 9. Preparation of a $\frac{1}{10}$-in. map of Great Britain, with hills: amount required for 1900-1, 250*l.*; approximate further amount required for completion, 750*l.*; probable date of completion, December 31, 1902. 10. General revision and maintenance of the 6-in. and 25-in. maps of Great Britain, so that no map shall have remained unrevised for a longer period than twenty years: amount required for 1900-1, 96,909*l.*; approximate further amount required for completion, 1,086,035*l.*; probable date of completion, December 31, 1907. 11. Completion of the re-survey of Ireland on the 25-in. scale: amount required for the year 1900-1, 53,000*l.*; approximate further amount required for completion, 813,500*l.*; probable date of completion, December 31, 1915. 12. Survey of Guernsey on the 25-in. scale: amount required for completion (by December 31, 1900), 405*l.* 13. Revision of Town Scale maps (the cost over and above the cost of revision on the 25-in. scale being repaid by the towns desiring revision on the larger scale), 4,000*l.* 14. Maps for Land Judges' Court and Land Commission, Ireland (to be ultimately repaid from the proceeds of the sales of estates), 3,600*l.* 15. Engraving maps for the Geological Survey, 1,000*l.*, and services for other public departments, 5,850*l.* 16. Publication of maps prepared and revised as above: amount required for 1900-1, 50,100*l.*; approximate further amount required for completion, 707,200*l.*; probable dates of completion—December 31, 1909, for Great Britain, and December 31, 1920, for Ireland.

HAREWOOD-PLACE AND OXFORD-STREET.—An extensive site is being cleared at the corner (west) of Oxford-street and Harewood-place, having a return frontage to the entire west side of the latter thoroughfare, and a south frontage to Hanover-square, for the erection of a block which will comprise shops, offices, and residential chambers. Mr. Paul Hoffmann is appointed as architect of the proposed buildings, the contractor being Mr. H. Lovatt, of Wolverhampton and West Kensington. Amongst the houses already pulled down was one in Harewood-place which the late Sir James Paget, Bart., occupied during many years. We notice, too, that the adjoining premises in Oxford-street of the Royal Orthopædic Hospital are about to be rebuilt. The hospital, originally established by Dr. Little in 1838 in a house on the west side of Bloomsbury-square, at the corner of Hart-street, was removed to its present quarters about forty years ago.

LONDON COUNTY COUNCIL MONEY BILL.—The Bill which the Council will introduce in the course of the current Session of Parliament is intended to define the amounts that they may expend for the various purposes in respect whereof capital expenditure is necessary during the financial year begin-

ning on April 1, 1900, and (on account of the following financial year) during the six months next ensuing. Amongst the objects in question are the following—sites and buildings for new Council offices, coroner's courts, weights and measures stations, reformatories for inebriates, workshops, gas-meter testing-stations, lunatic asylums, an epileptic colony at Horton, precipitation and other works at pumping-stations, sewerage works, and new main and relief sewers, purchase of property, compensations, and works, industrial dwellings, &c., in respect of the Tower Bridge approaches, and of the widening of the Strand at Holywell-street, Tottenham Court-road at Bozier's-court, Southampton-row, Wandsworth-road, High-street, Kensington; Albert Embankment, York-road, Battersea; Long-lane, Southwark; Old-street, Goswell-road; of the laying-out of a new street in Southwark; of the St. George's-place, Knightsbridge, improvement; and of the rebuilding of Battersea Bridge, under the Act of 1884; stations, buildings, riverside piers, floats, &c.; for purposes of the Fire Brigade Act, 1865; electrical lighting on Victoria Embankment and Westminster Bridge; rebuilding of Highgate Archway and Vauxhall, Old Gravel-lane, St. George-in-the-East, and Cat and Mutton, Shoreditch, Bridges; and the removal of certain gates, bars, or other obstructions in streets. Some other projected schemes foreshadowed by the Bill relate to tramways and their adaptation for electrical traction, the purchase of Spitalfields Market, the acquisition of a large open space at Dollis Hill, a tunnel between Rotherhithe and Wapping, and new waterworks, reservoirs, and aqueducts.

CAPITAL AND LABOUR.

DISPUTE IN THE LONDON BUILDING TRADE.—On inquiry at the offices of the London branch of the Amalgamated Society of Carpenters and Joiners, it was stated by the secretary, Mr. Rust, that though no official intimation of the willingness of the masters to concede the carpenters' demand of a penny per hour advance in wages had been received by him, several firms had already signified their agreement with the terms in question. The Central Association of Master Builders had communicated to the men's society their willingness to meet the men half-way and make an advance of a halfpenny per hour, and the matter was to be placed before the employees and a vote taken. The result would be known about a week hence, and would be submitted to the masters at a meeting to be held on the 19th inst. Mr. Rust further stated that in the case of the men adhering to their demands and the refusal of the masters to comply with them, some 3,000 or 4,000 men would be affected. He thought, however, that the men would most probably rest content with the halfpenny offered them by the masters, which would make a wage of 10½d. per hour.——From subsequent inquiries, it appears that the threatened crisis will be averted. The men have held special branch meetings all over the metropolis to consider the situation, and although the result of the ballot cannot be made known until the beginning of next week, it is stated that there is a majority in favour of accepting the employers' offer of ½d. per hour increase in wages against the union demand of 1d.—*Morning Advertiser.*

THE JOINERS' DISPUTE, COALVILLE, LEICESTER.—The masters and men met in conference at the Fox and Goose Hotel recently to consider the rule as to wages. Mr. George Beckworth, of Whitwick, master builder, presided, and both sides were fully represented. After a lengthy argument the masters agreed to pay the carpenters and joiners a halfpenny an hour extra, making 8d. an hour to "ordinary skilled workmen." With regard to the dispute with the bricklayers' labourers, at a former meeting the Master Builders' Association determined that only competent labourers should be paid at the rate of 5½d. per hour.

BRICKLAYERS' WAGES, COLCHESTER.—The Colchester bricklayers employed by builders who are members of the Master Builders' Federation ceased work recently owing to the employers' refusal to accede to the demand of the Colchester Branch of the Operative Bricklayers' Union for a higher rate of pay. The general rate in the town was hitherto 7d. an hour, and the Union had put in a demand for payment of 8d. an hour. The masters have since expressed their willingness to accede to an increase of wages from 7d. to 7½d.

BRICKLAYERS' WAGES AT WILMSLOW, CHESHIRE.—The master builders of Wilmslow, Alderley Edge, and the many surrounding districts, have refused to grant an advance of wages to the bricksetters, and the men's society now threaten to come out on strike in the first week in May. The present rate of pay is 8½d., and the men are now agitating for an increase of 1d. per hour. A large number of men will be affected. If the increase be granted wages here will still be lower than the Manchester rate.

FELIXSTOWE PAINTERS' STRIKE.—At a meeting of the masters on the 10th inst. it was decided to accede to the men's terms. Work was, therefore, resumed the following day. The re-arranged terms comprehend an immediate advance of ½d. per hour, and an additional ½d. in twelve months' time.

JOINERS' WAGES, SOUTHPORT.—The Southport joiners and their employers have come to terms. The men asked for an increase of 1d. per hour, but have met the employers half way and accepted ½d. an hour.

PAINTERS' WAGES, NORTHWICH.—The operative house painters in the Northwich district have been granted an advance of ½d. per hour in wages, with, it is stated, the promise of another ½d. next year.

EMPLOYMENT IN THE BUILDING TRADES DURING MARCH.—According to the *Labour Gazette* employment in the building trades has improved and is good in most branches. The percentage of unemployed union members among carpenters and plumbers at the end of March was 2·6 compared with 3·1 in February, and 1·6 in March, 1899. Nine disputes, mostly in regard to wages, commenced during the month. Six of these were in Scotland and three in England.

DUNDEE MASONS' STRIKE.—The Dundee masons' strike, which has lasted for over two months, is now at an end. Both masters and men have accepted the terms suggested by the Lord Provost and members of the Works Committee, viz., that no reduction of wages should take place until May 15; that wages should then be reduced by ½d., and remain stationary for six months; that no further reduction or advance should take effect unless after three months' notice on either side; and that there should be no victimising of individuals on either side for the part they had taken in the dispute.

DUNFERMLINE PAINTERS' STRIKE.—In response to an invitation from the Dunfermline master painters, a deputation of the workmen met with the employers on Thursday last week, when a discussion took place respecting the several points at issue which have led to the men being on strike for about a fortnight. At the end of the conference the employers instructed their Secretary to inform the men that they would concede the demand for an advance of wages from 8d. to 8½d. per hour, with the proviso that future agreements should terminate at the end of December each year, and that any alteration of rules should come into force on February 1 of each year if mutually agreed upon.

JOINERS' WAGES AND WORKING RULES, GLASGOW.—A mass meeting of the joiners of Glasgow and district was held in the City Hall on the 13th inst. for the purpose of considering the present position of the negotiations with the employers regarding wages and working regulations. A year ago an agreement was arrived at, by which a set of working regulations were agreed to by both parties, and the wages fixed at 10d. per hour. This agreement has expired. In February last the men sent a communication to the employers stating that they wished the agreement to be renewed for another year, and asking for a reply. No reply, however, was given beyond an intimation of a reduction of 1d. per hour in wages. At the meeting it was moved and seconded "That we resist any attempt to reduce wages or alter the working rules. That the men interview their individual employers with the object of obtaining an answer as to whether the rules are to be binding for the next twelve months from April 16. Failing a favourable reply, work to be stopped."

LEGAL.

MEANS OF ESCAPE IN CASE OF FIRE.

AT Guildhall a few days ago, before Mr. Alderman Bell, Mr. Robert James Worley, an architect, of Lincoln's Inn-fields, was summoned at the instance of the London County Council for having failed to comply with a notice requiring him, as owner of a certain workshop, situate at 169 and 170, Aldersgate-street, to provide necessary means of escape in case of fire for the persons employed there. Mr. Horace Avory (instructed by Mr. Chilvers on behalf of the London County Council) appeared in support of the summons, and said that under the Factory and Workshop Act, non-compliance with the Council's notice rendered the defendant liable to a penalty of 1*l.* per day from the commencement of the offence, and he was now summoned for his neglect from December 5 to March 12. The proceedings arose under the following circumstances. In October, 1897, the Home Office called the attention of the London County Council to the fact that these premises were inadequately provided with means of escape from fire. On November 3, 1898, the Council sent a letter to the defendant as the owner, pointing out to him the work which required to be done, consisting mainly in the construction of an iron staircase from top to bottom. No answer was received to that notice, and a second one was served upon him on July 28, 1899, requiring the alterations to be carried out before October 28. To this also there was no answer, and, as he took no steps whatever to comply with the request of the Council, this summons was issued. Mr. Avory pointed out that, under the Act, it was quite open to Mr. Worley to have formally objected to the Council's propositions, in which case the matter would have gone to arbitration; but he had done nothing at all, and had not even suggested any difference of opinion. Evidence was given showing that the upper floors of No. 169 were occupied by a mantle manufacturers', and constituted a workshop, the ground floor and basement being let to the Aërated Bread Company, and cut off from the other premises. The only connexion between 169 and 170 was a door let into the party-wall, and there was no workshop at 170. Mr. McCarthy, for the defence, argued that these were two separated buildings, and if the defendant carried out the Council's suggestions he would have to trespass on the premises occupied by the Aërated Bread Company. No. 169 could be called a workshop, no doubt, but not 170. Mr. Avory said counsel was not entitled to argue these matters before the Court; he should have gone to arbitration. Mr. McCarthy: We are not compelled to go to arbitration. My defence is that there are sufficient means of escape. The learned counsel then contended that the notice served on the defendant was bad, as these were two separate sets of premises. The case was heard the previous week, and was adjourned by the Alderman, who desired time to consider his decision. He now said that the notice, which was the foundation of these proceedings, alleged that the premises in question were a workshop. Looking carefully at the definition in the clauses, he could not think that they formed one building, but were separate, and that No. 170 did not come within the section. The Council's notice appeared to him to be bad, and, therefore, he dismissed the summons. The law on the matter was very difficult, and he was quite willing to state a case.—*Times.*

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

26,310.—ELECTRICAL FITTINGS: *G. A. Clark, W. McAulay, and J. McLaren.*—The casings are intended for use in making junction and distribution boxes, electrical switch bases and cases, wall and ceiling roses, &c.; in the instance of wall-brackets the conductors are soldered on to branch pins passing through an insulating block and recessed in order to form sockets for plugs at the flexible cords' ends, a fibrous disc, which a screw cap keeps in its place, grips the cords; for arc lamps the pins are socketted at each end, and leads are sweated into the sockets when they have been passed down through a divided insulating disc. Other applications of the invention are specified.

26,318.—DOOR AND SIMILAR BOLTS: *J. May.*—A spring at the back of a sliding bolt tends to force it into a staple; in one position an arm which projects from the bolt through a T-shaped slot in the casing prevents the bolt from being shot; but the bolt may be shot from one side of the door by means of a rod that passes through the door to that side, and which, when pressed, engages with and turns the arm until it enters into the slot and so frees the spring to shoot the bolt; for windows the rod is discarded.

26,334.—ELECTRICAL SWITCHES: *W. J. Ferguson and W. G. H. Stump.*—In a narrow circular chamber made of some insulating material and attached to the switch is put some mercury together with an insulating disc which fits tightly in the chamber and is mounted upon a spindle, the contact terminals being exposed within the chamber; a pointer upon a spindle indicates the circuit, which may be broken by turning the spindle's thumb-piece so that the disc will displace the mercury.

26,350.—PROCESS OF ORNAMENTING WOOD: *H. Buyten.*—In order to bring out the wood's natural grain by means of sand-blasting the surface, having been rendered quite smooth, or inlaid or carved, is protected—as to such parts that are not to be sand-blasted—with a stencil-plate of paper, rubber, &c., that is cemented on to it, or with varnish; after the process of blasting, a soft steel wire brush is applied, before removal of the stencil-plate a stain may be applied, and then to the rest of the surface may be applied a lighter stain or such other colours as are desired.

26,375.—WORKMEN'S TIME CHECKING APPARATUS: *F. W. Mäes.*—Across the machine's face are caused to move a set of rods, which have loose sleeves—one for each workman—graduated with notches, say for every ten minutes, to be seen through cased apertures; under normal circumstances the rods and their sleeves move in unison, but a workman upon his arrival hangs a numbered disc upon the hook of his lever, and by so doing, lifts the lever's other end into the notch immediately above and thereby arrests the sleeve which thus remains locked to mark the time of his arrival.

26,403.—FLUSHING APPARATUS AND LATRINES: *J. Day.*—The tipper is mounted in the front of a chamber contained in a trapped lower pan into which passes a vertical pipe leading out of the choked outlet that receives the upper pan's discharge; an apron upon the pan covers the inlet into the chamber, and the ball-ended trunnions of the tipper work in blocks that fit into recesses in the chamber's sides, so as to allow its removal, together with the bearings, for repair; a vessel, to be tipped by the hand, and set upon the edge of a sink and underneath a tap, may serve for flushing purposes; for latrines each of the basins may be fashioned as is described above, and be further provided with a trap

which discharges over a weir into a common trough, a separate flush being supplied to the basin and the trough respectively.

26,413.—HINGES FOR STEP-LADDERS: *C. Fulford and G. F. Manion*—The hinges are made with rule-joints or with stops that limit the opening of the ladder, the hinge-plates being joined together with jointed stays or links, which also have stops. In some forms the stays may be rejected, or the jointed links are screwed on to the ladder's sides.

26,466.—CLOSET DISCHARGE FITTINGS: *R. Fyfe.*—For effecting discharge the air is exhausted from within a space between two traps by raising the piston of a cylinder, from whose lower end a pipe passes to the space above the second trap. Under normal conditions the piston reposes within an annular extension at the foot of the cyclinder so that the outer air passes through the cylinder and a pipe provided for the purpose, whereby any premature action—say, by the emptying of slops, is obviated.

26,512.—BENDING METAL PIPES: *G. Brandt.*—The apparatus is devised for the use of plumbers and other artificers in bending metal pipes when the latter are cold; it comprises a range of half-rounded shaping templets, which are cast either separately or together, and are fastened with pins upon a base-plate; the base-plate having been firmly secured to a bench or wall, one end of the pipe is held in one of the grooves in the most suitable templet with a bar or an eccentrical cam, and the pipe is then bent round by the hand, the groove serving to preserve its circular form.

26,517.—WELL DOORS OF LIFTS: *A. Sear.*—A pivotted lever upon the cage engages, as the latter rises, with a tumbler upon the balanced and vertically-sliding door, upon the door—and normally lying at rest within a recess in the tumbler—is pivotted another lever which locks the tumbler when the latter is in engagement. When the door ascends a fixed pin is struck by the lever (upon the door), which thereupon rises to tilt the tumbler, so that the door, thus freed, falls, through its own weight, into the closed position.

26,610.—ELECTRICAL ARC LAMPS AND GLOBE-HOLDERS: *R. E. B. Crompton and E. A. N. Pochin*—The frame comprises two plates, joined at the middle, with four tubes which carry regulating solenoids, a resistance, a dash-pot, a choking coil, and a transformer—an insulated yoke being supported by two of the tubes; the arc-enclosing globe and the lower carbon-holder are borne by the yoke, whilst a hollow bolt and a lower yoke upon two rods sliding within long tubes support the outer globe, the bolt has an inner thread which engages with a screw in a cap on the lower carbon-holder's lower end, a clutch upon a central tube joined with cores in the solenoids, and carrying the dash-pot's piston at its upper end sustains the upper carbon; the arc lamps, for direct or alternating currents with enclosed or open arcs, are after the kind specified in No. 6,276 of 1897.

26,644.—PACKING FOR PIPE-JOINTS: *E. Putzeys.*—The packing, intended for use with the spigot and socket, and similar joints of sewers, water-mains, and so on, consists of fusible rings composed of some insulating material—a mixture of terra-cotta, sulphur, and tar, for example—in which are embedded spiral metal conductors connected to terminals; the rings are inserted into the joint and are then fused by the flow of an electrical current through the conductors.

26,713.—SERVICE PIPE REGULATING VALVES: *R. S. Watson, F. H. Durell, and M. B. Miller.*—A cylindrical valve, whose ports are connected by a rod, is fitted in a cylinder, between the valve's inlet and outlet, which has discharge ports at its upper end, the contact of a ring upon the valve and the cylinder's lower edge closes the valve under normal conditions, whilst a spring presses a relief valve on the rod's lower end against its seating; as the rod is pressed downwards, the relief valve opens, and then the cylindrical valve opens also, whereupon the flush flows through the ports, but with liberation of the rod the relief valve becomes closed, and then the main valve is shut by the operation of an air regulator above the outlet.

26,755.—ROOFING-STRUCTURES, SHEDS, &C., OF GLASS, &C.: *J. Lowe and G. E. Shawyer (Joseph Lowe).*—A framework built up with rails and transverse tie rods, which join together stakes or posts driven into the ground is covered over with roofing sections of wood, corrugated iron, &c., or with glazed frames. For a lean-to roof the uprights are joined by horizontal tie-rods and by bearers that vary in height, the ends and sides of the structures are to be covered in with boards, sacking, corrugated metal plates, glazed frames, and so on.

26,795.—HAND-SAWS: *W. A. Kindt.*—The inventor supplies a handle which can be applied to different saw-blades. The handle is slotted to take the base of the blade, which has wings near its base; the wings pass between a slotted plate affixed to the handle and another slotted plate which is pivoted or hinged on to the former. The curved ends of the latter slotted plate engage with a spring or sliding catch when it is turned down to be parallel to the other slotted plate.

26,797.—CLOSING OF JUNCTIONS IN EARTHENWARE PIPES: *J. C. Trueman.*—The method of closing junction inlets or outlets in earthenware pipes when they are not being used is described as equally available for joining pipes: a groove and a ridge are fashioned upon the branch pipe's socket, projections upon the inserted plug pass through two segmental openings made in the ridge, then the plug is turned, and the joint is finished with the clay packing already filled in; for joining pipes, the pipes are made with grooves and ridges at their ends respectively.

26,804.—TUNNEL DRIVING: *W. J. E. Binnie.*—A shield is to be employed for driving the tunnels, which are lined with concrete compressed with the rams which propel the shield; as the shield advances temporary rings are built up within the permanent lining, the concrete being shovelled in between the rings and the tail end of the shield, and pressed in sections by the rams, the rear rings are taken out as the concrete becomes set, their upper parts being allowed to fall upon tracks which consist of short rail-lengths secured to the lower segments of the rings.

MEETINGS.

SATURDAY, APRIL 21.

Dundee Institute of Architecture.—Visit to Messrs. Justice & Son's works and Kingoodie House.

Edinburgh Architectural Association.—Visit to Dysart House and Ravenscraig Castle.

MONDAY, APRIL 23.

Royal Institute of British Architects.—Mr. Killingworth Hedges, M.Inst.C.E., on "Protection of Public Buildings against Lightning." Illustrations will be shown by lantern slides. 8 p.m.

Institution of Civil Engineers.—Special meeting. The eighth "James Forrest" lecture, by Sir William H. Preece, K.C.B., F.R.S., on "The Relations between Electricity and Engineering." 8 p.m. The lecture will be repeated on Tuesday, April 24, at 4 p.m.

TUESDAY, APRIL 24.

Institution of Civil Engineers.—Annual general meeting of corporate members only, to receive the report of the Council, and to elect the Council and auditors for the ensuing year. 8 p.m.

The Society of Designers (Members' Evening).—Mr. Turbayne will show some book decorations, such as bindings in cloth and leather, paper covers, title pages, publishers' marks, head and tail pieces, posters, &c.; and Mr. Lindsay Butterfield will show examples of his designs for tapestry, cretonne, wall-papers, &c. There will be a musical programme. 7 p.m.

THURSDAY, APRIL 26.

Carpenters' Company, London Wall (Lectures on Carpentry and Joinery).—Professor T. Roger Smith on "Carpentry, Framing of Roofs, Partitions, &c." 7.30 p.m.

Institution of Electrical Engineers.—Professor George Forbes, F.R.S., on "The Electric Transmission of Power." 8 p.m.

Institution of Mechanical Engineers.—Professor H. S. Hele-Shaw, F.R.S., on "Road Locomotion." 8 p.m.

FRIDAY, APRIL 27.

Architectural Association.—Messrs. J. D. Crace and Gerald Moira on "Colour Decoration." 7.30 p.m.

Royal Institution.—The Right Hon. Lord Kelvin on "Nineteenth Century Clouds over the Dynamical Theory of Heat and Light." 9 p.m.

SATURDAY, APRIL 28.

British Institute of Certified Carpenters. — Visit to Messrs. Farmer & Brindley's, Westminster Bridge-road, at 3.30 p.m.

Royal Institution. — Professor Stanley Lane-Poole, M.A., on "Egypt in the Middle Ages." I. 3 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

April 4.—By DRIVERS, JONAS, & Co. (at Usk).

Llandenny, Monmouth.—A freehold cottage and ten enclosures, 39 a. 3 r. 2 p.	£1,490
Pentre Farm, 85 a. 1 r. 28 p., f.	4,100
Twenty-three freehold meadows, 295 a. 0 r. 12 p.	13,330
Coed-y-Brain Farm, 75 a. 0 r. 28 p., f.	2,210
Lower Maerdy Farm, 127 a. 1 r. 17 p., f.	5,025
Langeriew, Monmouth.—Enclosures, cottage, and Maerdy Hill Wood, 59 a. 2 r. 38 p., f.	685
Coed Cynwr Farm, 156 a. 1 r. 33 p., f.	1,150
Freehold cottages, gardens, and the Royal Oak House, 3 a. 1 r. 16 p., f.	463
Cwrt-y-Dela Farm, 71 a. 2 r. 18 p., f.	770
Llangwm Isaf, Monmouth.—Cwrt Robin Farm, 93a. 2r. 15p, f.	1,640
Four freehold enclosures, 17a. 1r. 15p.	255
Enclosures and a stone quarry, 37a. 1r. 23p. f.	330
Llangwm Isaf Farm, 134a. 3r. 33p., f.	2,000
Llansoy, Monmouth.—Lower House Farm, 155a. 3r. 36p., f.	2,425
Two cottages and six enclosures, 33a. 0r. 30p., f.	870
New House Farm, 140a. 1r. 37p., f.	1,700
Three cottages and enclosures, 45 a. 3 r. 29 p., f.	865
Llandenny, Mon.—Percoed Farm, 22 a. 3 r. 5 p., f.	440
Six enclosures, 29 a. 2 r. 4 p., f.	925

April 6.—By MESSRS. SPELMAN (at Norwich).

Norwich.—10 and 12, Denbigh-st., f., r. 25*l.*	355

April 7.—By J. KITTOW (At Launceston).

Jacobstowe, Cornwall. — Penhallum Farm, 38 acres, f.	600

April 9.—By LINNETT & LANE.

Kensal Rise.—8, 14, 18, and 26, Bathurst-gardens, u.t. 97 yrs., g.r. 23*l.*, r. 145*l.*	1,470

By MIDDLETON & CRACKNELL.

Hampstead.—46, Hemstal-rd., f., e.r. 48*l.*	£560

By E. W. RICHARDSON & SON.

Islington.—23 and 25, Canonbury-rd., u.t. 18½ yrs., g.r. 10*l.*, r. 76*l.*	430
Manor Pk.—94 and 96, Herbert-rd., f.	575

By S. WALKER & SON.

Dulwich.—142, Rosendale-rd., u.t. 91 yrs., g.r. 10*l.* 10s., r. 60*l.*	635

By J. H. LYNCH.

Canning Town.—Liverpool-rd., f.g.r.'s 67*l.* 4s., reversion in 85½ yrs.	1,460
Ordnance-rd., f.g.r. 18*l.* 12s., reversion in 85½ yrs.	410
Star-lane, f.g.r.'s 43*l.* 10s., reversion in 85½ yrs.	975
Baron-rd., f.g.r.'s 70*l.*, reversion in 85½ yrs.	1,545
Clifton rd., &c., f.g.r. 32*l.* 4s., reversion in 85½ yrs.	710

By WILKINSON, SON, & WELCH (at Brighton).

Hove, Sussex.—18, Wilbury-rd., f.	1,900
Brighton, Sussex.—22, Upper Wellington-rd., f.	420

April 10.—By DEBENHAM, TEWSON, & Co.

Blackheath.—1, Beaconsfield-bldgs., u.t. 59 yrs., g.r. nil, r. 280*l.*	6,050

By NOTT, CARTWRIGHT, & ETCHES.

Pimlico.—41, Moreton-st., u.t. 30 yrs., g.r. 8*l.* 10s., r. 55*l.*	490
126, Alderney-st., u.t. 31½ yrs., g.r. 8*l.*, r. 60*l.*	580
Streatham.—38 to 68 (even), Marian-rd., u.t. 99 yrs., g.r. 69*l.* 4s.	2,040

By RUTLEY, SON, & VINE.

Haverstock Hill.—42, Adelaide-rd., u.t. 39½ yrs., g.r. nil	1,000
Islington.—15, Spencer-st., u.t. 18½ yrs., g.r. 8*l.*, r. 45*l.*	250
Kentish Town.—23, Bartholomew-rd, u.t. 58½ yrs., g.r. 8*l.*, r. 50*l.*	620

By PHILIP STOCK.

Dulwich.—9, 11, 13 and 15, Tell-grove, u.t. 79 yrs., g.r. 24*l.*	800
Stockwell.—2, Bellefields-rd., u.t. 64½ yrs., g.r. 15s., e.r., 50*l.*	525
Brixton.—7 and 9, Ardville-rd, u.t. 88 yrs., g.r. 21*l.*	550

By FLEURET, SONS, & ADAMS.

Fleet-st.—Fetter-lane, "The Falcon" p.-h.; also 10 and 11, St. Dunstan's-chambers, u.t. 89 yrs., g.r. 100*l.*, r. 625*l.*	6,000
Norwood.—Berridge-rd., f.g.r. 36*l.*, reversion in 68 yrs.	830
Shepherd's Bush.—Poplar-grove, f g.r. 30*l.*, reversion in 76½ yrs.	800
Chelsea.—Oakley-cres., i.g.r. 36*l.*, u.t. 53¼ yrs., g.r. 6*l.*	630
Paddington.—Praed-st., "The Load of Hay" p.-h., u.t. 21 yrs., g.r. 20*l.*, r. 100*l.*	1,420
Hampstead.—23, 25, and 27, Buckland-cres., u.t. 51½ yrs, g.r. 15*l.*, r. 300*l.*	2,905
St. John's Wood.—107, Alexandra-rd., u.t. 57½ yrs., g.r. 15*l.*, r. 85*l.*	715
Kilburn.—26, Carlton-vale, u.t. 48½ yrs., g.r. 4*l.* 5s., r. 80*l.*	675
83 and 84, Cambridge-rd., u.t. 62½ yrs., g.r. 16*l.*, r. 91*l.*	710
Bayswater.—27, Newton-rd., u.t. 21½ yrs., g.r. 6*l.*, r. 60*l.*	400
Paddington.—London-st., "Ashton's Hotel"; also 17, Arthur-mews, u.t. 20¾ yrs., g.r. 12*l.*, r. 268*l.*	3,100

By ROGERS, CHAPMAN, & THOMAS.

Kensington.—120, Lexham-gdns., u.t. 71 yrs., g.r. 4*l.*, r. 125*l.*	1,700
Belgravia.—60, Cadogan-pl., beneficial lease for 4¾ yrs., r. 250*l.*	1,000
Hornsey.—2 to 10, Weston-parade, u.t. 95 yrs., g.r. 94*l.*, r. 470*l.*	4,785
96, 98, & 102, High-street, u.t. 95 yrs., g.r. 51*l.*, r. 130*l.*	1,835
Palmer's-green.—2, Broadway-parade, u.t. 94 yrs., g.r. 17*l.* 17s., r. 90*l.*	1,150
Fulham.—49, & 51, New King's-road, u.t. 96 yrs., g.r. 20*l.*, r. 170*l.*	2,200

By BOYTON, PEGRAM, & BUCKMASTER (at Walham-green).

Hammersmith.—2 & 4, Holyport-road, f., r. 78*l.*	730

By EDWIN EVANS (at Clapham-junction).

Wandsworth.—16, Dent's-road, u.t. 80½ yrs., g.r. 7*l.* 10s., e.r. 45*l.*	450
Battersea.—31, Rollo-street, u.t. 62½ yrs., g.r. 4*l.*	345
61, Speke-road, u.t. 64½ yrs., g.r. 5*l.*	255
46, Wakehurst-rd., f., r. 42*l.*	480
11, Cologne-rd., u.t. 67 yrs., g.r. 7*l.*, e.r. 34*l.*	340
New Malden.—1 and 2, The Chestnuts, u.t. 53 yrs. g.r. 12*l.* 10s., e.r. 68*l.*	425
Wandsworth.—5, Patten-rd., u.t. 79 yrs., g.r. 10*l.* 5s., e.r. 55*l.*	570
11, 11a, 13, 13a, 15 and 17, Cargill-rd., u.t. 87½ yrs., g.r. 18*l.*	1,070
36, 38, and 40, Algarve-rd., u.t. 87½ yrs., g.r. 13*l.* 10s.	630
Tooting.—21, 22, and 23, Mandrake-rd., u.t. 99 yrs., g.r. 16*l.* 10s.	665

April 11.—By HOBSON, RICHARDS, & Co.

Holloway.—Bardolph-rd., i.g.r. 21*l.*, u.t. 328 yrs., g.r. nil	520
Crayford-rd., i.g. rents 61*l.* 10s., u.t. 328 yrs., g.r. nil.	1,530

By T. G. WHARTON.

Peckham.—3, Rye Villas, u.t. 78½ yrs., g.r. 7*l.* 7s., r. 30*l.*	300
62, St. Aidans-rd., u.t. 78½ yrs., g.r. 5*l.* 5s., r. 28*l.*	270
Tottenham.—1 and 2, Tebworth-rd., u.t. 70 yrs., g.r. nil	400
Eltham, Kent.—8 to 20 (even), Novar-rd., u.t. 79 yrs., g.r. 35*l.*	1,052
Swanley, Kent.—Crockenhill, a freehold nursery, area 1 a.	500
Wimbledon.—195, Haydons-rd., u.t. 81 yrs., g.r. 6*l.*	215

April 12.—By C. SPARROW & SON.

Finchley.—Regent's Park-rd., "Floral" and "Yew Tree" cottages, f.	615
Coleridge-rd., a plot of building land, f.	130

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard

ning on April 1, 1900, and (on account of the following financial year) during the six months next ensuing. Amongst the objects in question are the following—sites and buildings for new Council offices, coroner's courts, weights and measures stations, reformatories for inebriates, workshops, gas-meter testing-stations, lunatic asylums, an epileptic colony at Horton, precipitation and other works at pumping-stations, sewerage works, and new main and relief sewers, purchase of property, compensations, and works, industrial dwellings, &c., in respect of the Tower Bridge approaches, and of the widening of the Strand at Holywell-street, Tottenham Court-road at Bozier's-court, Southampton-row, Wandsworth-road, High-street, Kensington; Albert Embankment, York-road, Battersea; Long-lane, Southwark; Old-street, Goswell-road; of the laying-out of a new street in Southwark; of the St. George's-place, Knightsbridge, improvement; and of the rebuilding of Battersea Bridge, under the Act of 1884; stations, buildings, riverside piers, floats, &c.; for purposes of the Fire Brigade Act, 1865; electrical lighting on Victoria Embankment and Westminster Bridge; rebuilding of Highgate Archway and Vauxhall, Old Gravel-lane, St. George-in-the-East, and Cat and Mutton, Shoreditch, Bridges; and the removal of certain gates, bars, or other obstructions in streets. Some other projected schemes foreshadowed by the Bill relate to tramways and their adaptation for electrical traction, the purchase of Spitalfields Market, the acquisition of a large open space at Dollis Hill, a tunnel between Rotherhithe and Wapping, and new waterworks, reservoirs, and aqueducts.

CAPITAL AND LABOUR.

DISPUTE IN THE LONDON BUILDING TRADE.—On inquiry at the offices of the London branch of the Amalgamated Society of Carpenters and Joiners, it was stated by the secretary, Mr. Rust, that though no official intimation of the willingness of the masters to concede the carpenters' demand of a penny per hour advance in wages had been received by him, several firms had already signified their agreement with the terms in question. The Central Association of Master Builders had communicated to the men's society their willingness to meet the men half-way and make an advance of a halfpenny per hour, and the matter was to be placed before the employees and a vote taken. The result would be known about a week hence, and would be submitted to the masters at a meeting to be held on the 19th inst. Mr. Rust further stated that in the case of the men adhering to their demands and the refusal of the masters to comply with them, some 3,000 or 4,000 men would be affected. He thought, however, that the men would most probably rest content with the halfpenny offered them by the masters, which would make a wage of 10½d. per hour.——From subsequent inquiries, it appears that the threatened crisis will be averted. The men have held special branch meetings all over the metropolis to consider the situation, and although the result of the ballot cannot be made known until the beginning of next week, it is stated that there is a majority in favour of accepting the employers' offer of ½d. per hour increase in wages against the union demand of 1d.—*Morning Advertiser.*

THE JOINERS' DISPUTE, COALVILLE, LEICESTER.—The masters and men met in conference at the Fox and Goose Hotel recently to consider the rule as to wages. Mr. George Beckworth, of Whitwick, master builder, presided, and both sides were fully represented. After a lengthy argument the masters agreed to pay the carpenters and joiners a halfpenny an hour extra, making 8d. an hour to "ordinary skilled workmen." With regard to the dispute with the bricklayers' labourers, at a former meeting the Master Builders' Association determined that only competent labourers should be paid at the rate of 5½d. per hour.

BRICKLAYERS' WAGES, COLCHESTER.—The Colchester bricklayers employed by builders who are members of the Master Builders' Federation ceased work recently owing to the employers' refusal to accede to the demand of the Colchester Branch of the Operative Bricklayers' Union for a higher rate of pay. The general rate in the town was hitherto 7d. an hour, and the Union had put in a demand for payment of 8d. an hour. The masters have since expressed their willingness to accede to an increase of wages from 7d. to 7½d.

BRICKLAYERS' WAGES AT WILMSLOW, CHESHIRE.—The master builders of Wilmslow, Alderley Edge, and the many surrounding districts, have refused to grant an advance of wages to the bricksetters, and the men's society now threaten to come out on strike in the first week in May. The present rate of pay is 8½d., and the men are now agitating for an increase of 1d. per hour. A large number of men will be affected. If the increase be granted wages here will still be lower than the Manchester rate.

FELIXSTOWE PAINTERS' STRIKE. — At a meeting of the masters on the 10th inst. it was decided to accede to the men's terms. Work was, therefore, resumed the following day. The re-arranged terms comprehend an immediate advance of ½d. per hour, and an additional ½d. in twelve months' time.

JOINERS' WAGES, SOUTHPORT.—The Southport joiners and their employers have come to terms. The men asked for an increase of 1d. per hour, but have met the employers half way and accepted ½d. an hour.

PAINTERS' WAGES, NORTHWICH.—The operative house painters in the Northwich district have been granted an advance of ½d. per hour in wages, with, it is stated, the promise of another ½d. next year.

EMPLOYMENT IN THE BUILDING TRADES DURING MARCH.—According to the *Labour Gazette* employment in the building trades has improved and is good in most branches. The percentage of unemployed union members among carpenters and plumbers at the end of March was 2·6 compared with 3·1 in February, and 1·6 in March, 1899. Nine disputes, mostly in regard to wages, commenced during the month. Six of these were in Scotland and three in England.

DUNDEE MASONS' STRIKE.—The Dundee masons' strike, which has lasted for over two months, is now at an end. Both masters and men have accepted the terms suggested by the Lord Provost and members of the Works Committee, viz., that no reduction of wages should take place until May 15; that wages should then be reduced by ½d., and remain stationary for six months; that no further reduction or advance should take effect unless after three months' notice on either side; and that there should be no victimising of individuals on either side for the part they had taken in the dispute.

DUNFERMLINE PAINTERS' STRIKE.—In response to an invitation from the Dunfermline master painters, a deputation of the workmen met with the employers on Thursday last week, when a discussion took place respecting the several points at issue which have led to the men being on strike for about a fortnight. At the end of the conference the employers instructed their Secretary to inform the men that they would concede the demand for an advance of wages from 8d. to 8½d. per hour, with the proviso that future agreements should terminate at the end of December each year, and that any alteration of rules should come into force on February 1 of each year if mutually agreed upon.

JOINERS' WAGES AND WORKING RULES, GLASGOW.—A mass meeting of the joiners of Glasgow and district was held in the City Hall on the 13th inst. for the purpose of considering the present position of the negotiations with the employers regarding wages and working regulations. A year ago an agreement was arrived at, by which a set of working regulations were agreed to by both parties, and the wages fixed at 10d. per hour. This agreement has expired. In February last the men sent a communication to the employers stating that they wished the agreement to be renewed for another year, and asking for a reply. No reply, however, was given beyond an intimation of a reduction of 1d. per hour in wages. At the meeting it was moved and seconded "That we resist any attempt to reduce wages or alter the working rules. That the men interview their individual employers with the object of obtaining an answer as to whether the rules are to be binding for the next twelve months from April 16. Failing a favourable reply, work to be stopped."

LEGAL.

MEANS OF ESCAPE IN CASE OF FIRE.

AT Guildhall a few days ago, before Mr. Alderman Bell, Mr. Robert James Worley, an architect, of Lincoln's Inn-fields, was summoned at the instance of the London County Council for having failed to comply with a notice requiring him, as owner of a certain workshop, situate at 169 and 170, Aldersgate-street, to provide necessary means of escape in case of fire for the persons employed there. Mr. Horace Avory (instructed by Mr. Chilvers on behalf of the London County Council) appeared in support of the summons, and said that under the Factory and Workshop Act, non-compliance with the Council's notice rendered the defendant liable to a penalty of 1*l.* per day from the commencement of the offence, and he was now summoned for his neglect from December 5 to March 12. The proceedings arose under the following circumstances. In October, 1897, the Home Office called the attention of the London County Council to the fact that these premises were inadequately provided with means of escape from fire. On November 3, 1898, the Council sent a letter to the defendant as the owner, pointing out to him the work which required to be done, consisting mainly in the construction of an iron staircase from top to bottom. No answer was received to that notice, and a second one was served upon him on July 28, 1899, requiring the alterations to be carried out before October 28. To this also there was no answer, and, as he took no steps whatever to comply with the request of the Council, this summons was issued. Mr. Avory pointed out that, under the Act, it was quite open to Mr. Worley to have formally objected to the Council's propositions, in which case the matter would have gone to arbitration; but he had done nothing at all, and had not even suggested any difference of opinion. Evidence was given showing that the upper floors of No. 169 were occupied by a mantle manufacturers', and constituted a workshop, the ground floor and basement being let to the Aërated Bread Company, and cut off from the other premises. The only connexion between 169 and 170 was a door let into the party-wall, and there was no workshop at 170. Mr. McCarthy, for the defence, argued that these were two separated buildings, and if the defendant carried out the Council's suggestions he would have to trespass on the premises occupied by the Aërated Bread Company. No. 169 could be called a workshop, no doubt, but not 170. Mr. Avory said counsel was not entitled to argue these matters before the Court; he should have gone to arbitration. Mr. McCarthy: We are not compelled to go to arbitration. My defence is that there are sufficient means of escape. The learned counsel then contended that the notice served on the defendant was bad, as these were two separate sets of premises. The case was heard the previous week, and was adjourned by the Alderman, who desired time to consider his decision. He now said that the notice, which was the foundation of these proceedings, alleged that the premises in question were a workshop. Looking carefully at the definition in the clauses, he could not think that they formed one building, but were separate, and that No. 170 did not come within the section. The Council's notice appeared to him to be bad, and, therefore, he dismissed the summons. The law on the matter was very difficult, and he was quite willing to state a case.—*Times.*

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

26,310.—ELECTRICAL FITTINGS: *G. A. Clark, W. McAulay, and J. McLaren.*—The casings are intended for use in making junction and distribution boxes, electrical switch bases and cases, wall and ceiling roses, &c.; in the instance of wall-brackets the conductors are soldered on to branch pins passing through an insulating block and recessed in order to form sockets for plugs at the flexible cords' ends, a fibrous disc, which a screw cap keeps in its place, grips the cords; for arc lamps the pins are socketted at each end, and leads are sweated into the sockets when they have been passed down through a divided insulating disc. Other applications of the invention are specified.

26,318.—DOOR AND SIMILAR BOLTS: *J. May.*—A spring at the back of a sliding bolt tends to force it into a staple; in one position an arm which projects from the bolt through a T-shaped slot in the casing prevents the bolt from being shot; but the bolt may be shot from one side of the door by means of a rod that passes through the door to that side, and which, when pressed, engages with and turns the arm until it enters into the slot and so frees the spring to shoot the bolt; for windows the rod is discarded.

26,334.—ELECTRICAL SWITCHES: *W. J. Ferguson and W. G. H. Stump.*—In a narrow circular chamber made of some insulating material and attached to the switch is put some mercury together with an insulating disc which fits tightly in the chamber and is mounted upon a spindle, the contact terminals being exposed within the chamber; a pointer upon a spindle indicates the circuit, which may be broken by turning the spindle's thumb-piece so that the disc will displace the mercury.

26,350.—PROCESS OF ORNAMENTING WOOD: *H. Buyten.*—In order to bring out the wood's natural grain by means of sand-blasting the surface, having been rendered quite smooth, or inlaid or carved, is protected—as to such parts that are not to be sand-blasted—with a stencil-plate of paper, rubber, &c., that is cemented on to it, or with varnish; after the process of blasting, a soft steel wire brush is applied, before removal of the stencil-plate a stain may be applied, and then to the rest of the surface may be applied a lighter stain or such other colours as are desired.

26,375.—WORKMEN'S TIME CHECKING APPARATUS: *F. W. Mäes.*—Across the machine's face are caused to move a set of rods, which have loose sleeves—one for each workman—graduated with notches, say for every ten minutes, to be seen through cased apertures; under normal circumstances the rods and their sleeves move in unison, but a workman upon his arrival hangs a numbered disc upon the hook of his lever, and by so doing, lifts the lever's other end into the notch immediately above and thereby arrests the sleeve which thus remains locked to mark the time of his arrival.

26,403.—FLUSHING APPARATUS AND LATRINES: *J. Day.*—The tipper is mounted in the front of a chamber contained in a trapped lower pan into which passes a vertical pipe leading out of the choked outlet that receives the upper pan's discharge; an apron upon the pan covers the inlet into the chamber, and the ball-ended trunnions of the tipper work in blocks that fit into recesses in the chamber's sides, so as to allow its removal, together with the bearings, for repair; a vessel, to be tipped by the hand, and set upon the edge of a sink and underneath a tap, may serve for flushing purposes; for latrines each of the basins may be fashioned as is described above, and be further provided with a trap

which discharges over a weir into a common trough, a separate flush being supplied to the basin and the trough respectively.

26,413.—HINGES FOR STEP-LADDERS: *C. Fulford and G. F. Manion*—The hinges are made with rule-joints or with stops that limit the opening of the ladder, the hinge-plates being joined together with jointed stays or links, which also have stops. In some forms the stays may be rejected, or the jointed links are screwed on to the ladder's sides.

26,466.—CLOSET DISCHARGE FITTINGS: *R. Fyfe.*—For effecting discharge the air is exhausted from within a space between two traps by raising the piston of a cylinder, from whose lower end a pipe passes to the space above the second trap. Under normal conditions the piston reposes within an annular extension at the foot of the cylinder so that the outer air passes through the cylinder and a pipe provided for the purpose, whereby any premature action—say, by the emptying of slops, is obviated.

26,512.—BENDING METAL PIPES: *G. Brandt.*—The apparatus is devised for the use of plumbers and other artificers in bending metal pipes when the latter are cold; it comprises a range of half-rounded shaping templets, which are cast either separately or together, and are fastened with pins upon a base-plate; the base-plate having been firmly secured to a bench or wall, one end of the pipe is held in one of the grooves in the most suitable templet with a bar or an eccentrical cam, and the pipe is then bent round by the hand, the groove serving to preserve its circular form.

26,517.—WELL DOORS OF LIFTS: *A. Sear.*—A pivotted lever upon the cage engages, as the latter rises, with a tumbler upon the balanced and vertically-sliding door, upon the door—and normally lying at rest within a recess in the tumbler—is pivotted another lever which locks the tumbler when the latter is in engagement. When the door ascends a fixed pin is struck by the lever (upon the door), which thereupon rises to tilt the tumbler, so that the door, thus freed, falls, through its own weight, into the closed position.

26,610.—ELECTRICAL ARC LAMPS AND GLOBE-HOLDERS: *R. E. B. Crompton and E. A. N. Pochin*—The frame comprises two plates, joined at the middle, with four tubes which carry regulating solenoids, a resistance, a dash-pot, a choking coil, and a transformer—an insulated yoke being supported by two of the tubes; the arc-enclosing globe and the lower carbon-holder are borne by the yoke, whilst a hollow bolt and a lower yoke upon two rods sliding within long tubes support the outer globe, the bolt has an inner thread which engages with a screw in a cap on the lower carbon-holder's lower end, a clutch upon a central tube joined with cores in the solenoids, and carrying the dash-pot's piston at its upper end sustains the upper carbon; the arc lamps, for direct or alternating currents with enclosed or open arcs, are after the kind specified in No. 6,276 of 1897.

26,644.—PACKING FOR PIPE-JOINTS: *E. Putzeys.*—The packing, intended for use with the spigot and socket, and similar joints of sewers, water-mains, and so on, consists of fusible rings composed of some insulating material—a mixture of terra-cotta, sulphur, and tar, for example—in which are embedded spiral metal conductors connected to terminals; the rings are inserted into the joint and are then fused by the flow of an electrical current through the conductors.

26,713.—SERVICE PIPE REGULATING VALVES: *R. S. Watson, F. H. Durell, and M. B. Miller.*—A cylindrical valve, whose ports are connected by a rod, is fitted in a cylinder, between the valve's inlet and outlet, which has discharge ports at its upper end, the contact of a ring upon the valve and the cylinder's lower edge closes the valve under normal conditions, whilst a spring presses a relief valve on the rod's lower end against its seating; as the rod is pressed downwards, the relief valve opens, and then the cylindrical valve opens also, whereupon the flush flows through the ports, but with liberation of the rod the relief valve becomes closed, and then the main valve is shut by the operation of an air regulator above the outlet.

26,755.—ROOFING-STRUCTURES, SHEDS, &C., OF GLASS, &C.: *F. Lowe and G. E. Shawyer (Joseph Lowe).*—A framework built up with rails and transverse tie rods, which join together stakes or posts driven into the ground is covered over with roofing sections of wood, corrugated iron, &c., or with glazed frames. For a lean-to roof the uprights are joined by horizontal tie-rods and by bearers that vary in height, the ends and sides of the structures are to be covered in with boards, sacking, corrugated metal plates, glazed frames, and so on.

26,795.—HAND-SAWS: *W. A. Kindt.*—The inventor supplies a handle which can be applied to different saw-blades. The handle is slotted to take the base of the blade, which has wings near its base; the wings pass between a slotted plate affixed to the handle and another slotted plate which is pivoted or hinged on to the former. The curved ends of the latter slotted plate engage with a spring or sliding catch when it is turned down to be parallel to the other slotted plate.

26,797.—CLOSING OF JUNCTIONS IN EARTHENWARE PIPES: *F. C. Trueman.*—The method of closing junction inlets or outlets in earthenware pipes when they are not being used is described as equally available for joining pipes: a groove and a ridge are fashioned upon the branch pipe's socket, projections upon the inserted plug pass through two segmental openings made in the ridge, then the plug is turned, and the joint is finished with the clay packing already filled in; for joining pipes, the pipes are made with grooves and ridges at their ends respectively.

26,804.—TUNNEL DRIVING: *W. F. E. Binnie.*—A shield is to be employed for driving the tunnels, which are lined with concrete compressed with the rams which propel the shield; as the shield advances temporary rings are built up within the permanent lining, the concrete being shovelled in between the rings and the tail end of the shield, and pressed in sections by the rams, the rear rings are taken out as the concrete becomes set, their upper parts being allowed to fall upon tracks which consist of short rail-lengths secured to the lower segments of the rings.

MEETINGS.

SATURDAY, APRIL 21.

Dundee Institute of Architecture.—Visit to Messrs. Justice & Son's works and Kingoodie House.

Edinburgh Architectural Association.—Visit to Dysart House and Ravenscraig Castle.

MONDAY, APRIL 23.

Royal Institute of British Architects.—Mr. Killingworth Hedges, M.Inst.C.E., on "Protection of Public Buildings against Lightning." Illustrations will be shown by lantern slides. 8 p.m.

Institution of Civil Engineers.—Special meeting. The eighth "James Forrest" lecture, by Sir William H. Preece, K.C.B., F.R.S., on "The Relations between Electricity and Engineering." 8 p.m. The lecture will be repeated on Tuesday, April 24, at 4 p.m.

TUESDAY, APRIL 24.

Institution of Civil Engineers.—Annual general meeting of corporate members only, to receive the report of the Council, and to elect the Council and auditors for the ensuing year. 8 p.m.

The Society of Designers (Members' Evening).—Mr. Turbayne will show some book decorations, such as bindings in cloth and leather, paper covers, title pages, publishers' marks, head and tail pieces, posters, &c.; and Mr. Lindsay Butterfield will show examples of his designs for tapestry, cretonne, wall-papers, &c. There will be a musical programme. 7 p.m.

THURSDAY, APRIL 26.

Carpenters' Company, London Wall (Lectures on Carpentry and Joinery).—Professor T. Roger Smith on "Carpentry, Framing of Roofs, Partitions, &c." 7.30 p.m.

Institution of Electrical Engineers.—Professor George Forbes, F.R.S., on "The Electric Transmission of Power." 8 p.m.

Institution of Mechanical Engineers.—Professor H. S. Hele-Shaw, F.R.S., on "Road Locomotion." 8 p.m.

FRIDAY, APRIL 27.

Architectural Association.—Messrs. J. D. Crace and Gerald Moira on "Colour Decoration." 7.30 p.m.

Royal Institution.—The Right Hon. Lord Kelvin on "Nineteenth Century Clouds over the Dynamical Theory of Heat and Light." 9 p.m.

SATURDAY, APRIL 28.

British Institute of Certified Carpenters.—Visit to Messrs. Farmer & Brindley's, Westminster Bridge-road, at 3.30 p.m.

Royal Institution.—Professor Stanley Lane-Poole, M.A., on "Egypt in the Middle Ages." I. 3 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

April 4.—By DRIVERS, JONAS, & CO. (at Usk).

Llandenny, Monmouth.—A freehold cottage and ten enclosures, 39 a. 3 r. 2 p.	£1,490
Pentre Farm, 85 a. 1 r. 28 p., f.	4,100
Twenty-three freehold meadows, 295 a. 0 r. 12 p.	13,330
Coed-y-Brain Farm, 75 a. 0 r. 28 p., f.	2,210
Lower Maerdy Farm, 127 a. 1 r. 17 p., f.	5,025
Langeriew, Monmouth.—Enclosures, cottage, and Maerdy Hill Wood, 59 a. 2 r. 38 p., f.	685
Coed Cynwr Farm, 156 a. 1 r. 33 p., f.	1,150
Freehold cottages, gardens, and the Royal Oak House, 3 a. 1 r. 16 p., f.	463
Cwrt-y-Dela Farm, 71 a. 2 r. 18 p., f.	770
Llangwm Isaf, Monmouth.—Cwrt Robin Farm, 93a. 2r. 15p, f.	1,640
Four freehold enclosures, 17a. 1r. 15p.	255
Enclosures and a stone quarry, 37a. 1r. 23p. f.	330
Llangwm Isaf Farm, 134a. 3r. 33p., f.	2,000
Llansoy, Monmouth.—Lower House Farm, 155a. 3r. 36p., f.	2,425
Two cottages and six enclosures, 33a. 0r. 30p., f.	870
New House Farm, 140a. 1r. 37p., f.	1,700
Three cottages and enclosures, 45 a. 3 r. 29 p., f.	865
Llandenny, Mon.—Percoed Farm, 22 a. 3 r. 5 p., f.	440
Six enclosures, 29 a. 2 r. 4 p., f.	925

April 6.—By MESSRS. SPELMAN (at Norwich).

Norwich.—10 and 12, Denbigh-st., f., r. 25*l.*	355

April 7.—By J. KITTOW (At Launceston).

Jacobstowe, Cornwall.—Penhallum Farm, 38 acres, f.	600

April 9.—By LINNETT & LANE.

Kensal Rise.—8, 14, 18, and 26, Bathurst-gardens, u.t. 97 yrs., g.r. 23*l.*, r. 145*l.*	1,470
By MIDDLETON & CRACKNELL.	
Hampstead.—46, Hemstal-rd., f., e.r. 48*l.*	£560
By E. W. RICHARDSON & SON.	
Islington.—23 and 25, Canonbury-rd., u.t. 18½ yrs., g.r. 10*l.*, r. 76*l.*	430
Manor Pk.—94 and 96, Herbert-rd., f.	575
By S. WALKER & SON.	
Dulwich.—142, Rosendale-rd., u.t. 91 yrs., g.r. 10*l.* 10s., r. 60*l.*	635
By J. H. LYNCH.	
Canning Town.—Liverpool-rd., f.g.r.'s 67*l.* 4s., reversion in 85½ yrs.	1,460
Ordnance-rd., f.g.r. 18*l.* 12s., reversion in 85½ yrs.	410
Star-lane, f.g.r.'s 43*l.* 10s., reversion in 85½ yrs.	975
Baron-rd., f.g.r.'s 70*l.*, reversion in 85½ yrs.	1,545
Clifton-rd., &c., f.g.r. 32*l.* 4s., reversion in 85½ yrs.	710
By WILKINSON, SON, & WELCH (at Brighton).	
Hove, Sussex.—18, Wilbury-rd., f.	1,900
Brighton, Sussex.—22, Upper Wellington-rd., f.	420

April 10.—By DEBENHAM, TEWSON, & CO.

Blackheath.—1, Beaconsfield-bldgs., u.t. 59 yrs., g.r. nil, r. 280*l.*	6,050

By NOTT, CARTWRIGHT, & ETCHES.

Pimlico.—41, Moreton-st., u.t. 30 yrs., g.r. 8*l.* 10s., r. 55*l.*	490
120, Alderney-st., u.t. 31½ yrs., g.r. 8*l.*, r. 60*l.*	530
Streatham.—38 to 68 (even), Marian-rd., u.t. 99 yrs., g.r. 69*l.* 4s.	2,040

By RUTLEY, SON, & VINE.

Haverstock Hill.—42, Adelaide-rd., u.t. 39½ yrs., g.r. nil	1,020
Islington.—15, Spencer-st., u.t. 18½ yrs., g.r. 8*l.*, r. 45*l.*	250
Kentish Town.—23, Bartholomew-rd, u.t. 58½ yrs., g.r. 8*l.*, r. 50*l.*	620

By PHILIP STOCK.

Dulwich.—9, 11, 13 and 15, Tell-grove, u.t. 79 yrs., g.r. 24*l.*	800
Stockwell.—2, Bellefields-rd., u.t. 64½ yrs., g.r. 18s., e.r., 50*l.*	525
Brixton.—7 and 9, Ardville-rd, u.t. 88 yrs., g.r. 21*l.*	550

By FLEURET, SONS, & ADAMS.

Fleet-st.—Fetter-lane, "The Falcon" p.-h.; also 10 and 11, St. Dunstan's-chambers, u.t. 89 yrs., g.r. 100*l.*, r. 625*l.*	6,000
Norwood.—Berridge-rd., f.g.r. 36*l.*, reversion in 68 yrs.	880
Shepherd's Bush.—Poplar-grove, f.g.r. 30*l.*, reversion in 76½ yrs.	800
Chelsea.—Oakley-cres., l.g.r. 36*l.*, u.t. 53¾ yrs., g.r. 6*l.*	630
Paddington.—Praed-st., "The Load of Hay" p.-h., u.t. 21 yrs., g.r. 20*l.*, r. 100*l.*	1,420
Hampstead.—23, 25, and 27, Buckland-cres., u.t. 51¾ yrs, g.r. 15*l.*, r. 300*l.*	2,905
St. John's Wood.—107, Alexandra-rd., u.t. 57¾ yrs., g.r. 15*l.*, r. 85*l.*	715
Kilburn.—26, Carlton-vale, u.t. 48½ yrs., g.r. 4*l.* 5s., r. 80*l.*	675
83 and 84, Cambridge-rd., u.t. 62¼ yrs., g.r. 16*l.*, r. 91*l.*	710
Bayswater.—27, Newton-rd., u.t. 21¼ yrs., g.r. 6*l.*, r. 60*l.*	400
Paddington.—London-st., "Ashton's Hotel"; also 17, Arthur-mews, u.t. 20¾ yrs., g.r. 12*l.*, r. 268*l.*	3,100

By ROGERS, CHAPMAN, & THOMAS.

Kensington.—120, Lexham-gdns., u.t. 71 yrs., g.r. 4*l.*, r. 125*l.*	1,700
Belgravia.—60, Cadogan-pl., beneficial lease for 4¾ yrs., r. 250*l.*	1,000
Hornsey.—2 to 10, Weston-parade, u.t. 95 yrs., g.r. 94*l.*, r. 470*l.*	4,785
96, 98, & 102, High-street, u.t. 95 yrs., g.r. 51*l.*, r. 190*l.*	1,835
Palmer's-green.—2, Broadway-parade, u.t. 94 yrs., g.r. 17*l.* 17s., r. 90*l.*	1,150
Fulham.—49, & 51, New King's-road, u.t. 96 yrs., g.r. 20*l.*, r. 170*l.*	2,200

By BOYTON, PEGRAM, & BUCKMASTER (at Walham-green).

Hammersmith.—2 & 4, Holyport-road, f., r. 78*l.*	730

By EDWIN EVANS (at Clapham-junction).

Wandsworth.—16, Dent's-road, u.t. 80¼ yrs., g.r. 7*l.* 10s., e.r. 45*l.*	450
Battersea.—31, Rollo-street, u.t. 62½ yrs., g.r. 4*l.*	345
61, Speke-road, u.t. 64½ yrs., g.r. 5*l.*	255
46, Wakehurst-rd., f., r. 42*l.*	480
11, Cologne-rd., u.t. 67 yrs., g.r. 7*l.*, e.r. 34*l.*	340
New Malden.—1 and 2, The Chestnuts, u.t. 53 yrs. g.r. 12*l.* 10s., e.r. 68*l.*	425
Wandsworth.—5, Patten-rd., u.t. 79 yrs., g.r. 10*l.* 5s., e.r. 55*l.*	570
11, 11a, 13, 13a, 15 and 17, Cargill-rd., u.t. 87½ yrs., g.r. 18*l.*	1,070
36, 38, and 40, Algarve-rd., u.t. 87½ yrs., g.r. 13*l.* 10s.	630
Tooting.—21, 22, and 23, Mandrake-rd., u.t. 99 yrs., g.r. 16*l.* 10s.	665

April 11.—By HOBSON, RICHARDS, & CO.

Holloway.—Bardolph-rd., l.g.r. 21*l.*, u.t. 328 yrs., g.r. nil	520
Crayford-rd, l.g. rents 61*l.* 10s., u.t. 328 yrs., g.r. nil	1,530

By T. G. WHARTON.

Peckham.—3, Rye Villas, u.t. 78½ yrs., g.r. 7*l.* 7s., r. 30*l.*	300
62, St. Aidans-rd., u.t. 78½ yrs., g.r. 5*l.* 5s., r. 28*l.*	270
Tottenham.—1 and 2, Tebworth-rd., u.t. 70 yrs., g.r. nil	400
Eltham, Kent.—8 to 20 (even), Novar-rd., u.t. 79 yrs., g.r. 35*l.*	1,050
Swanley, Kent.—Crockenhill, a freehold nursery, area 1 a.	500
Wimbledon.—195, Haydons-rd., u.t. 81 yrs., g.r. 6*l.*	215

April 12.—By C. SPARROW & SON.

Finchley.—Regent's Park-rd., "Floral" and "Yew Tree" cottages, f.	615
Coleridge-rd., a plot of building land, f.	130

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
*School	Berkhampstead, &c., School Assoc.	50*l.*; 35*l.*; and 15*l.*	June 16

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Sewers, &c.	Gildersome U.D.C.	J. Waugh, Civil Engineer, Bradford	April 21
Paving Works	Warminster (Wilts.) U.D.C.	A. F. Long, Surveyor, Warminster	do.
Additions, &c., to 9, Laura-place, Aberystwyth	Mr. G. F. Roberts	T. E. Morgan, Architect, Aberystwyth	do.
Additions to Workhouse Hospital, Birr, Ireland	Mr. E. T. Williams	H. Dooly, Board Room, Workhouse, Birr	do.
Additions to Pendoylan House, Cardiff		E. J. Williams, Architect, 31, High-street, Cardiff	do.
Schools, Ryton		Rev. Canon Baily, The Rectory, Ryton	do.
Tower and Spire at Church, Horsforth		J. B. Fraser, Architect, 8, Park-square, Leeds	do.
*School	Norwood (Middlesex) School Bd.	G. E. T. Lawrence, 22, Buckingham-street, Adelphi, W.C.	do.
*Shaft and Electric Light Station	Ilford U.D.C.	H. Shaw, Surveyor, 7, Cranbrook-road, Ilford	April 23
Mission Hall, Barnard Castle		F. H. Livesay, Architect, 107, Newgate-street, Bishop Auckland	do.
Alterations to Offices, Boston, Lincs.	Harbour and Dock Commissioners	Engineer, Market Place, Boston	do.
Hotel, South Broomhill	Right Hon. Earl Gray	G. Reavell, junr., Architect, Alnwick	do.
Cottage, Harperley Park, Bishop Auckland		Clark & Moscrop, Architects, Darlington	do.
Bridge, Llantillio, Crossemey	Monmouth R.D.C.	Mr. Rogers, Surveyor, Cwmcarvan	do.
Walls, &c. at Workhouse	East Preston Union Guardians	H. Howard, Architect, Town Offices, Littlehampton	do.
House, Summer-hill, Cork		W. H. Hill & Son, Architects, 28, South Mall, Cork	do.
Alterations to Wesleyan Chapel, Salop-street, Dudley	Trustees	A. Ramsell, Architect, 187, Wolverhampton-street, Dudley	do.
Rebuilding the Bell Inn, Stapleton		Bernard & Pearson, Architects, Baldwin-street, Bristol	do.
Shops and Houses, Abbeydale-road, Sheffield	Mr. A. Twigg	G. A. Wilson, Architect, Hartshead Chambers, Sheffield	do.
Road Materials, &c., near Guildford	Hambledon R.D.C.	G. Lintott, Surveyor, Cranleigh	do.
Road Works	Wivenhoe (Essex) U.D.C.	R. H. Barrell, Surveyor, Wivenhoe	do.
Paving Chapel-lane, Ibstock	Market Bosworth R.D.C.	Wm. Thorpe, Surveyor, Nailstone, Nuneaton	do.
Granite Road Metal, &c.	Gretton R.D.C.	J. E. Willford, Council Offices, Uppingham	April 24
Station Buildings near Manchester	Lancashire & Yorkshire Rly. Co	Engineer, Hunt's Bank, Manchester	do.
Alterations to Workhouse	Newton Abbot Union Guardians	S. Segar, Architect, Union-street, Newton Abbot	do.
Foundry, Pellon		Utley & Co., Architects, 10, Waterhouse-street, Halifax	do.
Repairing Charnwood and Penshurst roads	Croydon Town Council	E. Mawdsley, Town Hall, Croydon	do.
Street Works, Landguard-road	Southampton Corporation	W. B. G. Bennett, Borough Engineer, Southampton	do.
Boring and Lining Well at Waterworks, Waterford	Hertford Corporation	J. H. Jevons, Civil Engineer, Hertford	do.
Boiler House and Laundry, Wakefield	Committee	J. Vickers Edwards, Architect, County Hall, Wakefield	April 25
Pavilion, Lonsdale Park	Workington Athletic Sports Co.	Eden, 58, Pow-street, Workington	do.
Five Houses, Station-road, Rainham	Mr. M. W. Porter	F. Smith, Architect, Bank Chambers, New Brompton	do.
School, Rhiwfawr	Llangwicke School Board	W. W. Williams, Architect, 63, Wind-street, Swansea	do.
*Six Detached Homes, Plumstead	Woolwich Guardians	Church, Quick & Whincop, Architects, William-street, Woolwich	do.
Electricity Buildings, Strawberry-road, Pendleton	Salford Corporation	J. Holt, Civil Engineer, 6, St. Mary's Gate, Manchester	April 26
Road Metal, &c. (9,000 tons)	Lanchester R.D.C.	W. Cumming, Surveyor, Lanchester	do.
*Public Baths	Winchester Corporation	See Advertisement	April 27
Farmhouse, Longwood, near Halifax		F. F. Beaumont, Architect, Southgate Chambers, Halifax	do.
Two Houses, Burnopfield	Consett, Durham, Waterworks Co.	A. Russell, Sherburn-terrace, Consett	do.
Chapel, Boundary Wall, &c.	Cricklade (Wilts.) Burial Board	W. Drew & Sons, Architects, Victoria-street, Swindon	April 28
Parsonage, Grimethorpe Colliery, Cudworth		C. H. Fowler, Architect, The College, Durham	do.
Additions to Factory	Messrs. Reynolds & Co.	W. H. Read, Architect, Corn Exchange, Swindon	do.
*Church, Lancaster-road, Notting Hill		C. J. Mann & Son, 29, Great George-street, S.W.	do.
*New Infant Schools	Herne School Board	Egerton Collard, Architect, 12, East-street, Herne Bay	April 30
*School Buildings	East Ham School Board	R. L. Curtis, 120, London Wall, E.C.	do.
*Theatre at Nuneaton	Nuneaton Theatres, &c., Co., Ltd	Owen & Ward, Architects, 71, Colmore-row, Birmingham	do.
Sea Wall, North Fambridge	Maldon R.D.C.	H. G. Keywood, Civil Engineer, 6, Market-hill, Maldon	do.
Wall, Gates, &c., Redhill	Market Hall Company, Limited	A. Smith, Market Hall, Redhill	do.
Two Villas, Canterbury		L. T. Ashenden, Architect, 29, Westgate, Canterbury	do.
Two Cottages, Brookend Farm, Springfield	Chelmsford Corporation	Surveyor, 16, London-road, Chelmsford	do.
Sewers, &c.	Brighouse Corporation	A. M. Fowler, Civil Engineer, 1, St. Peter's-square, Manchester	do.
Surveyor's Materials	Rothwell (Yorks.) U.D.C.	J. T. Pears, Surveyor, Council Offices, Rothwell	do.
*Boundary Walls, Gates, and Sewer	Redhill Market Hall Co., Ltd.	Clayton & Black, 152, North-street, Brighton	do.
*Sewerage Works	Lathona and Burscough U.D.C.	J. T. Wood, Engineer, 3, Cook-street, Liverpool	May 1
Gasholder Tank, Hempsted	Gloucester Gaslight Company	W. S. Morland, Engineer, Gasworks, Hempsted	do.
*Making-up and Paving Beaumont-crescent	Fulham Vestry	Surveyor, Town Hall, Walham Green, S.W.	May 2
*Sewerage Works	Ludlow Corporation	Pollard & Tingle, Engrs., 31, Old Queen-st., Westminster, S.W.	do.
Water Works, Brereton, near Rugeley	Lichfield R.D.C.	W. E. Rogers, Surveyor, Rugeley	May 3
*Vans	Camberwell Vestry	Engineer, Vestry Hall, Camberwell	do.
*Buildings, various (See Advertisement)	Hornsey U.D.C.	Surveyor, Council's Offices, Southwood-lane, Highgate, N.	May 7
*Sewerage Works	London County Council	Engineer's Department, County Hall, Spring Gardens, S.W.	May 8
*Extension of East Cliff House	Metropolitan Asylums Board	C. & W. Henman, Architects, 64, Cannon-street, E.C.	May 9
*Supplying and Fixing Iron Caps and Ties, &c.	Metropolitan Asylums Board	Office, Carmelite-street, Embankment, E.C.	May 10
*Storage Reservoir	Leominster Corporation	Borough Surveyor, Town Hall, Leominster	May 12
*Workhouse Infirmary	Romsey Union	J. Jenvey, Architect, Market Place, Romsey	do.
*Town Hall	Workington Corporation	Oliver & Dodgshun, Architects, Lowther-street, Carlisle	No date
Alterations to Church, Blucher-street, Barnsley		H Crawshaw, Architect, 13, Regent-street, Barnsley	do.
Club Premises, Shipley, Yorks.			do.
Cottage and Shop, Thotley Point, near Ipswich		J. S. Corder, Architect, Wimbourne House, Ipswich	do.
Business Premises	Mr. Thos. Corner	W. W. Robinson, Architect, Hereford	do.
Mill, Blackburn		S. Stott, Architect, York Chambers, Oldham	do.
Shops and Flats, West Hampstead, N.W.		Percy Green, Architect, 113, Finsbury-pavement, E.C.	do.
Restoration St. Mary's Church, Rockcliffe, nr. Carlisle		Oliver & Dodgshun, Architects, Carlisle	do.
Granite Road Metal	Desborough U.D.C.	D. J. Diver, Surveyor, Desborough	do.
Road Works, Beeston		F. C. Martin, Civil Engineer, Angel-row, Nottingham	do.
Additions to the County Hotel, Ulverston		J. W. Grundy & Son, Architects, Brogden-street, Ulverston	do.
Shop and House, Kingsthorpe, Northants		C. Palmer, Architect, Logan-street, Market Harborough	do.
Six Houses, Crowthorn-road, Ashton-under-Lyne		Burton & Percival, Archts., 150A, Stamford-st., Ashton-under-Lyne	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Clerk of Works	Stepney Union	3*l.* 3*s.* per week	April 26
*Borough Engineer and Surveyor	Grimsby Town Council	400*l.* per annum, increasing to 500*l.*	May 8
*Clerk of Works	Lydney R.D.C.		May 9
*Architectural Assistant	Plumstead Vestry		No date

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p. iv.* *Contracts, pp. iv. vi. viii. x. & xxi.* *Public Appointments, pp. xviii. xix. & xxi.*

PRICES CURRENT OF MATERIALS:

WOOD.*

Per Petersburg standard hundred.

	£ s. d.	£ s. d.
White Sea: first yellow deals	18 0 0	23 0 0
Second do.	16 10 0	18 0 0
Third do.	13 10 0	14 10 0
Battens, 40s., 30s., and 25s. less respectively.		
Petersburg: first yellow deals	15 10 0	18 0 0
Second do.	13 0 0	14 0 0
Battens, 30s. and 20s. less respectively.		
Petersburg, white deals	12 10 0	15 0 0
Do. white battens	10 0 0	11 10 0
Riga, white deals	10 10 0	11 10 0
Swedish mixed yellow deals	16 0 0	21 0 0
" Third do.	14 0 0	17 0 0
" Fourth do.	13 0 0	14 0 0
" Fifth do.	12 0 0	13 0 0
Battens, 30s., 20s., and 10s. less respectively.		
Whitewood, 10 to 20 per cent. less.		
Finnish unsorted yellow deals	11 10 0	12 0 0
Battens, 10s. and 5s. less respectively.		
Whitewood, 5 to 10 per cent. less.		
Norwegian second yellow battens	8 0 0	8 5 0
Third do.	7 10 0	8 0 0
Fourth do.	7 5 0	7 10 0
Whitewood, 10s. less.		
Danzig, Crown Deck deals, per 40 ft. 3 in.	0 15 0	1 5 0
Brack	0 12 0	1 0 0
St. Lawrence Pine deals, &c., per P.S.H.:—		
1st, Bright and Dry, regular sizes	21 0 0	28 0 0
" " oddments	14 10 0	22 0 0
2nd " regular sizes	16 10 0	19 0 0
" " oddments	11 0 0	15 10 0
3rd " regular sizes	10 10 0	11 10 0
" " oddments	9 0 0	10 0 0
4th " regular sizes	9 10 0	10 10 0
" " oddments	8 10 0	9 12 0
St. Lawrence Spruce deals, &c.		
First, regular sizes	11 0 0	13 10 0
Second "	10 0 0	10 10 0
Third "	9 15 0	10 0 0
Fourth "	9 5 0	9 15 0
Oddments and battens at 20s., 10s., 7s. 6d., and 5s. less respectively.		
New Brunswick Spruce deals, &c.	9 15 0	11 0 0
Oddments, battens, and fourths	9 5 0	9 15 0
United States pitch pine planks and boards	11 12 0	16 0 0
Prepared Boards, per square		
1¼ by 6½ and 7 in. 1st yellow	11 0	16 0
" " 2nd "	10 6	13 0
1 by 6½ and 7 in. 1st "	10 0	12 0
" " " white	9 0	10 0
" " 2nd yellow	9 0	11 0
" " " white	8 0	9 0
¾ by 6½ & 7 in. 1st & 2nd yellow	7 9	9 0
" " " white	7 6	8 6
¾ by 6½ and 7 in. 1st yellow and white (grooved, tongued, and beaded)	8 6	9 6
¾ by 6½ and 7 in. 2nd yellow and white (ditto)	7 6	8 6
¾ by 6½ and 7 in. 1st yellow and white (ditto)	6 6	7 6
¾ by 6½ and 7 in. 2nd yellow and white (ditto)	6 0	7 0
Narrower widths at 10 per cent. less. 3rd quality at 15 per cent. less than 2nd.		
Danzig and Memel Fir Timber— per load		
Best middling	3 15 0	4 0 0
Good middling and Second	3 5 0	3 10 0
Common middling	3 0 0	3 5 0
Undersized	3 0 0	3 5 0
Swedish and Norwegian Balks	2 10 0	2 15 0
Baltic Oak Timber—		
Danzig and Stettin—Large	4 0 0	5 10 0
Small	3 5 0	4 0 0
Quebec Timber per load		
Yellow Pine	5 0 0	6 10 0
Oak	4 10 0	6 10 0
Elm	4 0 0	4 5 0
Ash	3 5 0	4 0 0
Birch	3 15 0	6 0 0
New Brunswick, &c., Birch	3 10 0	4 5 0
American Pitch Pine Timber	3 17 6	4 17 6
Wainscot, per log, 18 cubic ft.—		
Crown (Eng. & Dutch) / Brack nominal	3 15 0 / 3 0 0	4 17 6 / 4 0 0
Lathwood, per cubic fathom—		
Petersburg	4 0 0	6 10 0
Riga and Danzig	4 10 0	5 10 0
Norway Poles, per ft. run	0 0 1	0 0 1½
Oak Staves, per mille fall size pipe		
Memel, Crown	220 0 0	230 0 0
Brack	190 0 0	200 0 0
Danzig	165 0 0	175 0 0
Bosnia, single Barrel (nominal)	28 0 0	30 0 0
United States, Pipe	37 10 0	45 0 0
Hogshead, extra heavy and double extra	32 0 0	35 0 0
Indian Teake per load	11 10 0	16 10 0
British Guiana Greenheart	0 0 0	8 0 0
Mahogany, per foot superficial—		
Honduras, cargo average	0 0 4½	0 0 5½
Nicaragua, do.	0 0 4½	0 0 5½
Tabasco, do.	0 0 4½	0 0 6
Mexican, do.	0 0 4	0 0 4½
Panama, do.	0 0 3½	0 0 4
African, do.	0 0 3½	0 0 5
Cuba, do.	0 0 6	0 0 8
St. Domingo, do.	0 0 5	0 0 7½
Do. Curls (good to prime)	0 0 9	0 1 3
Walnut, American (logs)	0 3 0	0 5 0
Do. do. (planks and boards)	0 2 0	0 7 6
Italian, per foot superficial	0 0 3	0 0 7½
Black Sea, per ton	6 0 0	12 0 0
Satin Walnut (logs) per foot cube	0 1 0	0 1 6
" (planks and boards)	0 1 9	0 3 0

* The prices named are for the wood as imported and landed in the docks. Ten per cent., approximately, should be added in order to arrive at the current trade prices.

PRICES CURRENT (*Continued*).

	£ s. d.	£ s. d.
Sequoia (Californian redwood), per foot cube	0 1 9	0 2 0
Whitewood, American (logs)	0 1 4	0 1 9
" " (planks and boards)	0 1 9	0 2 9
Quartered oak " " "	0 2 3	0 4 0
Kauri pine (logs)	0 1 9	0 2 0
" " (planks)	0 2 3	0 2 9
Jarrah (planks)	0 2 0	0 2 3
Lancewood spars each, fresh and large	0 5 0	0 7 0
Lancewood spars, ordinary to fair	0 3 0	0 4 0
Degame spars	0 8 0	0 10 0

METALS.

		£ s. d.	£ s. d.
IRON—Pig, in Scotland	ton	3 16 0	0 0 0
Bar, Welsh, in London		9 0 0	9 15 0
Do. do. at works in Wales		8 10 0	9 0 0
Do. Staffordshire, in London		9 15 0	11 15 0
COPPER—British cake and ingot		82 0 0	83 0 0
Best selected		82 10 0	83 12 0
Sheets, strong		87 0 0	88 0 0
Chili bars		78 17 6	0 0 0
YELLOW METAL	lb.	6½d.	7d.
LEAD—Pig			
Spanish	ton	16 18 9	0 0 0
English Com. Brands		17 3 9	0 0 0
Sheet, English, 6 lbs. per sq. ft. and upwards		18 13 9	0 0 0
Pipe		19 3 9	0 0 0
ZINC—English sheet	ton	26 10 0	0 0 0
Vieille Montagne		28 10 0	0 0 0
Spelter		22 10 0	22 12 6
TIN—Straits		139 15 0	0 0 0
Australian		140 10 0	140 10 0
English Ingots		143 0 0	144 0 0
Banca		0 0 0	0 0 0
Billiton		0 0 0	0 0 0

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2½d. per ft. delivered.
" " fourths	2d. " "
21 oz. thirds	3d. " "
" " fourths	2½d. " "
26 oz. thirds	4d. " "
" " fourths	3½d. " "
32 oz. thirds	5d. " "
" " fourths	4½d. " "
Fluted sheet, 15 oz.	2½d. " "
" " 21 "	3½d. " "

OILS, &c.

		£ s. d.	£ s. d.
Raw Linseed Oil in pipes, per ton		26 10 0	0 0 0
" " " in drums, per gal.		0 2 4	0 0 0
Boiled " " in pipes, per ton		28 10 0	0 0 0
" " " in drums, per gal.		0 2 6	0 0 0
TAR—Stockholm	barrel	1 6 6	0 0 0
Archangel		1 0 0	0 0 0
Turpentine, in barrels, per cwt.		2 2 0	0 0 0
" in drums, per gal.		0 3 4	0 0 0
Genuine Ground English White Lead		25 10 0	0 0 0
Red Lead		22 0 0	0 0 0
Best Linseed Oil Putty, per cwt.		0 8 0	0 0 0

VARNISHES, &c.

	per gallon.
Fine Elastic Copal Varnish for outside work	0 16 0
Best Elastic Copal Varnish for outside work	1 0 0
Best Elastic Carriage Varnish for outside work	0 16 0
Best Hard Oak Varnish for inside work	0 10 0
Best Extra Hard Church Oak Varnish for inside work	0 10 0
Fine Hard Copal Varnish for inside work	0 16 0
Best Hard Copal Varnish for inside work	1 0 0
Best Hard Carriage Varnish for inside work	0 16 0
Extra Pale Paper Varnish	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 8 0
Brunswick Black	0 8 0
Berlin Black	0 15 6
Knotting	0 9 0
Best French and Brush Polish	0 8 6

BRICKS, &c.

	s. d.	
Hard Stocks	30 0	per thousand alongside, in river.
Rough Stocks and Grizzles	28 0	" " " "
Smooth Bright Facing Stocks	58 0	" " " "
Shippers	42 0	" " " "
Flettons	29 0	" " at railway depôt.
Red Wire Cuts	34 0	" " " "
Best Fareham Red	71 6	" " " "
Best Blue Pressed Staffordshire	86 0	" " " "
Best Stourbridge Fire Bricks	84 0	" " " "
Best White Glazed Stretchers	260 0	" " " "
Headers	240 0	" " " "
Quoins and Bull-nose	340 0	" " " "
Double Headers	320 0	" " " "
Best Dipped Salt Glazed Stretchers and Headers	240 0	" " " "
Quoins and Bull-nose	280 0	" " " "
Double Headers	230 0	per thousand at railway depôt.
Seconds Quality White and Dipped Salt Glazed	40 0	per thousand less than best.
Thames and Pit Sand	7 0	per yard, delivered
Thames Ballast	6 6	" "
Best Portland Cement	34 0	per ton "
Best Ground Blue Lias Lime	23 0	" "

NOTE.—The cement and lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 12s. od. per yard, delivered.
Stourbridge Fire-clay in sacks, 31s. 6d. per ton at rly, dpt.

PRICES CURRENT (*Continued*).

STONE.

	s. d.	
Ancaster in blocks	2 0	per ft. cube, deld. rly. depôt.
Bath "	1 7	" "
Beer "	1 6½	" "
Grinshill "	1 10	" "
Brown Portland in blocks	2 2	" "
Darley Dale "	2 1½	" "
Red Corsehill "	2 5	" "
Red Mansfield "	2 4½	" "
Hard York "	2 10	" "
Hard York 6 in. sawn both sides landings, to sizes (under 40 ft. sup.)	2 7	per ft. super. at rly. depôt.
" 6 in. Rubbed Ditto	2 10½	" "
" 3 in. sawn both sides slabs (random sizes)	1 3	" "
" " 3 in. self-faced Ditto	0 9	" "

SLATES.

in. in.	£ s. d.	
20×10 best blue Bangor	11 5 0	per 1000 of 1200 at ry. dep.
" best seconds "	10 15 0	" "
16× 8 best "	6 2 6	" "
20×10 best blue Portmadoc	10 18 0	" "
16× 8 " "	6 0 0	" "
20×10 best Eureka unfading green	11 2 6	" "
16× 8 " "	6 15 0	" "
20×10 Permanent green and Sedan green	10 0 0	" "
16× 8 " "	5 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	40 6	per 1,000 at rly. depôt.
Hip and valley tiles	3 6	per doz. " "
Best Broseley tiles	47 6	per 1,000 " "
Hip and valley tiles	4 0	per doz. " "

TO CORRESPONDENTS.

A. H. (Amount should have been stated).

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TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BERRYNARBOR (Devonshire).—For the erection of a farmhouse at Wheel, Berrynarbor, for Mr. M. B. Snell. Plans and specification by Mr. W. H. Lock, surveyor, Barnstaple:—

W. C. Latham & W. Sanders	£766 0	W. Sanders	£730 13
R. Burgess	735 10	Goss & Sons	713 0

BLABY (Leicestershire).—For the erection of a lodge, for the Blaby and Wigston Joint Hospital. Mr. R. J. Stephens, architect, Belvoir-street, Leicester:—

H. Chapman, Junr.	£450	W. G. Harrison	£432
G. Duxbury	442	W. Cooke, Broughton Astley, Rugby*	428
Charles Sharpe	440		

BLACKBURN.—For the erection of shop and house, Eldon-street, for the Blakey Moor Co-operative Society. Messrs. Simpson & Duckworth, architects, Richmond-chambers, Blackburn:—

B. Hatton	£1,151 15 6	Lewis & Sons	£1,065 0 0
R. Webster	1,139 0 0	Jas. Holden	1,035 0 0
Ginger & Cooper	1,124 6 3	W. J. W. Crosshaw	1,028 0 0
Willson & Sons	1,109 0 0	J. Gillibrand, Blackburn*	1,020 0 0
Jas. Parker	1,078 0 0		

LONDON.—For the Children's Receiving Home at Trenmar-gardens, for the Guardians of the Poor of Paddington. Mr. J. Wallis Chapman, architect, 11, Sutherland-avenue, W.:—

J. O. Richardson	£5,536	Godson & Sons	£5,145
Barrett & Power	5,397	F. & H. F. Higgs	4,973
Kingerlee & Sons	5,379	W. Gibson	4,918
Snewin Bros. & Co.	5,346	B. E. Nightingale, Albert Embankment	4,795
Falkner & Son	5,255		
John Appleby	5,244		
Holliday & Greenwood	5,154		

LONDON.—For the erection of new fireproof staircase at the Blue House Laundry, Walworth, S.E. Mr. Money Marsland, architect and surveyor, 68, Great Tower-street, E.C.:—

Candler & Sons	£252	Bragg & Sons	£227
John Marsland	242	H. C. Crooks*	215

[*See also next page.*

LONDON.—For decorative repairs, electric lighting, and re-drainage at "Martley," Leigham-court-road, Streatham, S.W. Mr. Money Marsland, architect, surveyor, and sanitary expert, 68, Great Tower-street, E.C.

Geo. Candler & Sons* £497

[No competition.]

LONDON.—For putting in foundations up to damp course of St. Thomas's Church, Telford Park, Streatham Hill, for the Vicar and building committee. Messrs. Sidney R. J. Smith, 14, York-buildings, Adelphi, and Spencer W. Grant, 63, Finsbury-pavement, E.C., joint architects. Quantities by Mr. Money Marsland, 68, Great Tower-street, E.C.:—

Contract No. 1.

G. H. & A. Bywaters & Sons	£2,591	Candler & Sons	£2,195
A. Porter	2,525	F. G. Minter*	2,070
Higgs & Hill	2,354		

Contract No. 2.—For the erection of part of the Superstructure.

F. & H. F. Higgs	£9,343	Candler & Sons	£8,000
Holloway Bros.	8,875	Smith & Sons	7,945
A. Porter	8,449	Gregory & Co.	7,845
Higgs & Hill	8,334	F. G. Minter	7,800

LONDON.—For erecting two pairs semi-detached villas, Clapham Common. Mr. Herbert Bignold, architect, 242, Lavender Hill, S.W.:—

Heather	£4,200	Dickson	£2,750
Jewell	3,744	Cane*	2,730
Jenkins	2,883		

LONDON.—For the erection of St. John's Institute, Larcom-street, Walworth, S.E.:—

Higgs & Hill	£5,995	Edwards & Medway	£5,697
Lawrance & Sons	5,854	Johnson & Co.	5,569
Holloway Bros.	5,728	Holliday & Greenwood	5,449
William Shepherd	5,700	John Marsland*	5,445

LONDON.—For erecting the first block of new Works Depot at Bethnal Green, for the Vestry of St. Matthew. Mr. R. Stephen Ayling, architect, 19, Old Queen-street, Westminster:—

Perry Bros.	£2,887	Chessum & Sons	£2,679
Jarvis & Sons	2,797	Harris & Wardrop	2,637
Johnson & Co.	2,790	Thomerson & Son	2,578
Sheffield Bros.	2,777	W. Gladding	2,512
Ashby Bros.	2,748	Gough & Co.	2,484
G. E. Todd	2,729	Joseph Haydon*	2,460
F. & F. J. Wood	2,683		

LUTON.—For the erection of a highway depôt, &c., St. Mary's-road, for the Town Council. Mr. A. J. L. Evans, Borough Engineer, Town Hall, Luton:—

Miskin & Sons	£5,817	G. Smart	£4,848
S. Redhouse	4,914	W. G. Dunham, Luton*	4,686
T. & E. Neville	4,851		

MAESTEG (Wales).—For the erection of schools, &c., Caeran, for the School Board. Mr. E. W. Burnett, architect, Tondu, near Bridgend:—

W. McGaul	£2,893	J. Battary	£2,493
P. Gaylard	2,820	E. Evans, Maesteg*	2,338
W. Francis	2,794		

MIDDLESBROUGH.—For the erection of a large block of business premises, South Bank, for the Middlesbrough Co-operative Society. Mr. W. G. Roberts, architect, 61, Albert-road, Middlesbrough. Quantities by Mr. Fred Cartwright, Foster's Buildings, 22, High-street, Sheffield:—

Murgatroyd & Sons	£11,950 0 0	Perks & Son	£9,346 9 9
Allison Bros.	10,500 0 0	Executors of the late J. Johnson, Middlesbrough*	9,264 0 0
Wm. Thompson	9,776 11 8	Hudson Bros. (withdrawn)	9,258 0 0
J. T. Bulmer	9,750 0 0		
G. Rodge	9,685 19 6		
W. A. King	9,553 17 0		
S. Coates	9,374 17 0		

MORTLAKE.—For the erection of forty-two workmen's dwellings, South Worple Way, for the Urban District Council of Barnes. Mr. G. Bruce Tomes, C.E., High-street, Mortlake:—

B. E. Nightingale	£13,285 0 0	S. Dockerill	£10,496 0 0
Lorden & Sons	12,888 0 0	J. Wilford	10,300 0 0
F. Tingley	12,867 2 5	D. Pitt, Holly Lodge, Mortlake*	9,947 0 0
W. S. Beaton	12,541 8 1	G. W. F. Bates	9,854 18 7
Soole & Sons	12,100 0 0	Jones Bros.	9,833 11 7
A. H. Harris	11,800 0 0		
C. R. Gurr	10,850 0 0		

NORTHAMPTON.—For the erection of new box factory, St. James-end, Northampton, for Messrs. Scott & Co. Messrs. Mosley & Scrivener, architects, Northampton.

J. M. Panting	£1,215 0 0	J. Garrett	£1,156 0 0
Wingrove & Stanley	1,198 10 0	G. J. Fisher	1,138 0 0
E. Archer	1,195 0 0	A. J. Chown	1,125 0 0
Sharman & Son	1,190 0 0	W. Beardsmore	1,108 0 0
		A. P. Hawtin*	1,094 0 0

(All of Northampton.)

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